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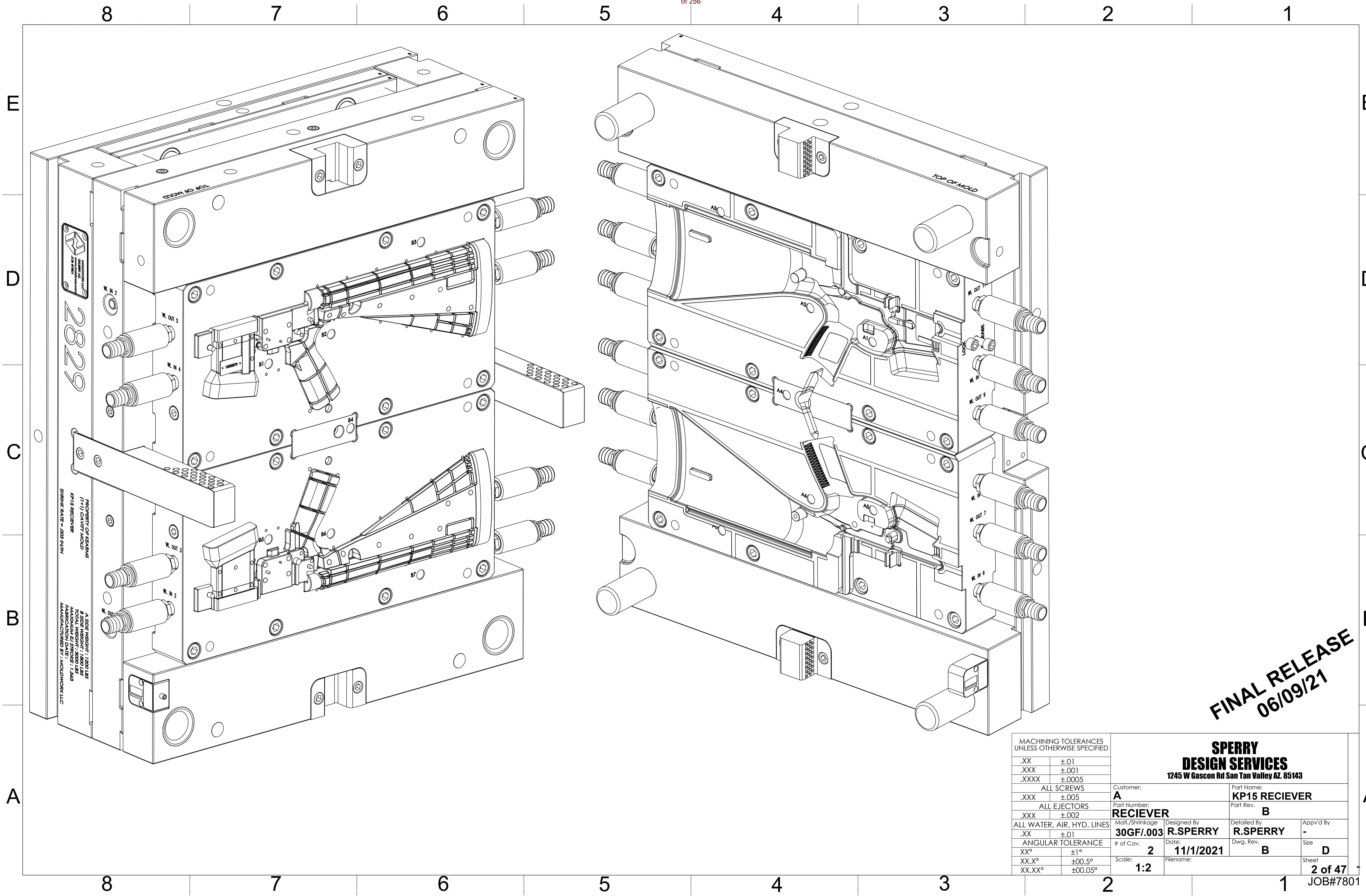
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DETAIL NUMBER	QTY.	SPARES	OVER-RUN	Rev.	DESCRIPTION	STOCK SIZE	SOURCE	VENDOR	MATERIAL/PART NO.
1100	1	0	0	A	TOP CLAMP	23.750 X 29.500 X 1.875	MB	-	#2 STEEL
1105	1	0	0	A	A PLATE	23.750 X 4.750 X 2.8750	MB	-	#2 STEEL
1200	1	0	0	A	B PLATE	23.750 X 4.750 X 2.3750	MB	-	#2 STEEL
1205	1	0	0	A	SUPPORT	23.750 X 29.500 X 2.3750	MB	-	#2 STEEL
1230	1	0	0	A	RAIL	29.500 X 1.875 X 3.500	MB	-	#2 STEEL
1235	1	0	0	A	RAIL	29.500 X 1.875 X 3.500	MB	-	#2 STEEL
1240	1	0	0	A	BTM CLAMP	23.750 X 29.500 X 1.375	MB	-	#2 STEEL
1245	1	0	0	A	EJ RETAINER	19.875 X 29.500 X .625	MB	-	#2 STEEL
1250	1	0	0	A	EJ PLATE	19.875 X 29.500 X 1.125	MB	-	#2 STEEL
2000	1	0	0	A	NOFIN CAVITY	20.000 X 10.000 X 2.8800	MW	-	H13
2005	1	0	0	A	INSERT	1.5254 X 2.6270 X .7407	MW	-	H13
2010	1	1	0	A	SO INSERT	1.1492 X .6700 X 1.0667	MW	-	H13
2015	1	0	0	A	PIN	.078 DIA X 2.3239	MW	-	P6-4
2025	1	0	0	A	SM CAVITY	20.0000 X 10.0000 X 2.8800	MW	-	H13
2026	1	1	0	A	SO INSERT	.8750 X .6250 X 1.000	MW	-	H13
2027	1	0	0	A	CAVITY INSERT	.5128 X .3152 X 1.0667	MW	-	S7
2100	1	0	0	A	LOGO INSERT	1.9326 X 1.6250 X 1.3949	MW	-	P20
2105	1	0	0	A	LOGO INSERT	1.9326 X 1.6250 X 1.3953	MW	-	P20
2150	1	0	0	A	SN INSERT	1.2500 X 1.400 X .7901	MW	-	P20
2200	1	0	0	A	NOFIN CORE	20.000 X 10.000 X 3.0886	MW	-	S7
2201	1	0	0	A	PIN	.250 DIA X 2.8263L	-	PCS	P17-6
2202	1	0	0	A	PIN	.281 DIA X 2.9542L	-	PCS	P19-6
2203	1	0	0	A	PIN	.172 DIA X 2.8363	-	PCS	P12-6
2204	1	0	0	A	PIN	.094 DIA X 2.9466	-	PCS	P7-6
2205	1	0	0	A	PIN	.188 DIA X 2.8382	-	PCS	P13-6
2206	1	0	1	A	PIN	.094 DIA X 2.8263	-	PCS	P7-6
2207	2	1	0	A	SN LOCATOR	3/8-16 X 2.750	MW	-	SHCS 3/8-16 X 2.75
2208	1	0	0	A	PIN	.250 DIA X 2.4451	-	PCS	P17-6
2210	1	0	0	A	INSERT	3.0654 X .9744 X 1.0366	MW	-	S7
2215	1	0	0	A	INSERT	.5180 X .3204 X .8962	MW	-	S7
2220	1	0	0	A	INSERT	.4514 X .4514 X .6250	MW	-	420SS
2225	1	0	0	A	SM CORE	20.0000 X 10.0000 X 3.1329	MW	-	S7
2226	1	0	0	A	PIN	.313 DIA X 2.8263	-	PCS	P21-6
2227	1	0	0	A	PIN	.250 DIA X 2.9216	-	PCS	P17-6
2228	1	0	0	A	PIN	.156 DIA X 2.4251	-	PCS	P11-6
2229	1	0	0	A	PIN	.125 DIA X 2.9467	-	PCS	P9-6
2230	1	0	0	A	PIN	.187 DIA X 2.8232	-	PCS	P13-6
2231	1	0	0	A	PIN	.094 DIA X 2.8263	-	PCS	P7-6
2232	1	0	0	A	PIN	.250 X 2.4452	-	PCS	P17-6
2233	1	0	0	A	INSERT	3.0660 X .9746 X 1.0366	MW	-	S7
2235	1	0	0	A	INSERT	.5227 X .3251 X .5000	MW	-	S7
3100	2	0	0	A	RUNNER BLK	4.2500 X 1.3750 X 2.3800	MW	-	S7
3140	6	0	0		KO EXTENSION	1/2-13 THD	-	OMN	PKE-L1.677
3200	1	0	0	A	SPRUCE BLOCK	5.0000 X 1.3750 X 2.8800	MW	-	H13
3250	1	0	0	A	LIFT BAR	12.44 X 3.00 X 2.50	MW	-	CRS
4000	2	0	0	A	SN PIN	.078 DIA X 2.9900	MW	PCS	P6-6
4002	1	0	0	A	EJ PIN	.375 DIA X 6.4425	MW	PCS	P25-8
4003	2	0	0	A	EJ PIN	.375 DIA X 6.750	-	PCS	P25-8
4004	6	0	0	A	EJ PIN	.187 DIA X 6.9425	MW	PCS	P13-8
4005	2	0	0	A	EJ PIN	.187 DIA X 7.1500	MW	PCS	P13-8
4006	2	0	0	A	EJ PIN	.187 DIA X 7.2082	MW	PCS	P13-8
4007	7	0	0	A	EJ PIN	.187 DIA X 7.4078	MW	PCS	P13-8
4008	5	0	0	A	EJ PIN	.187 DIA X 7.4254	MW	PCS	P13-8
4009	8	0	0	A	EJ PIN	.250 DIA X 7.3035	MW	PCS	P17-8
4010	38	0	0	A	EJ PIN	.125 DIA X 6.9425	MW	PCS	P9-8
4011	34	0	0	A	EJ PIN	.078 DIA X 6.9425	MW	PCS	PSP6-102
4012	10	0	0	A	EJ PIN	.078 DIA X 7.4370	MW	PCS	SP6-102
4013	4	0	0	A	EJ PIN	.094 DIA X 6.9425	MW	PCS	SP7-82
4014	10	0	0	A	EJ PIN	.078 DIA X 7.4100	MW	PCS	SP6-102
4015	1	0	0	A	EJ PIN	.250 DIA X 7.600	MW	PCS	P17-8
4016	1	0	0	A	EJ PIN	.250 DIA X 7.572	MW	PCS	P17-8
4017	1	0	0	A	EJ PIN	.250 DIA X 7.618	MW	PCS	P17-8
4018	1	0	0	A	EJ PIN	.250 DIA X 7.597	MW	PCS	P17-8
4019	2	0	0	A	EJ PIN	.250 DIA X 7.460	MW	PCS	P17-8
4020	1	0	0	A	EJ PIN	.250 DIA X 7.412	MW	PCS	P17-8

DETAIL NUMBER	QTY.	SPARES	OVER-RUN	Rev.	DESCRIPTION	STOCK SIZE	SOURCE	VENDOR	MATERIAL/PART NO.
4021	1	0	0	A	EJ PIN	.250 DIA X 7.535	MW	PCS	P17-8
4022	1	0	0	A	EJ PIN	.250 DIA X 7.610	MW	PCS	P17-8
4023	1	0	0	A	EJ PIN	.250 DIA X 7.582	MW	PCS	P17-8
4024	1	0	0	A	EJ PIN	.250 DIA X 7.634	MW	PCS	P17-8
4025	1	0	0	A	EJ PIN	.250 DIA X 7.616	MW	PCS	P17-8
4026	1	0	0	A	EJ PIN	.250 DIA X 7.553	MW	PCS	P17-8
4027	1	0	0	A	EJ PIN	.250 DIA X 7.422	MW	PCS	P17-8
4090	4	0	0	-	RETURN PIN	.750 DIA X 6.9375	MW	-	RP-75
4190	1	-	-	-	LOC RING	4501	MB	-	4501
4200	1	0	0	-	SPRUCE BUSHING	B-606-112	MB	-	B-606-112
4400	1	-	-	-	CYCLE CNTR	CVIN-100	-	PRO	CVIN-10
5200	20	-	-	-	CONNECTOR	3/8 NPT	-	PCS	PC-553
5205	4	-	-	-	CONNECTOR	1/4 NPT	-	PCS	352
5300	8	-	-	-	PIPE PLUG	3/8 NPT	-	PCS	WPB-40
5310	6	0	-	-	PIPE PLUG	1/4 NPT	-	PCS	1/4 NPT
5500	2	-	-	-	WATER BLOCK	WB562	-	PCS	WB562
6000	4	0	0	-	LDR PIN	1.500 DIA X 5.750	MB	-	508-GL
6005	4	0	0	-	GE LDR PIN</td				



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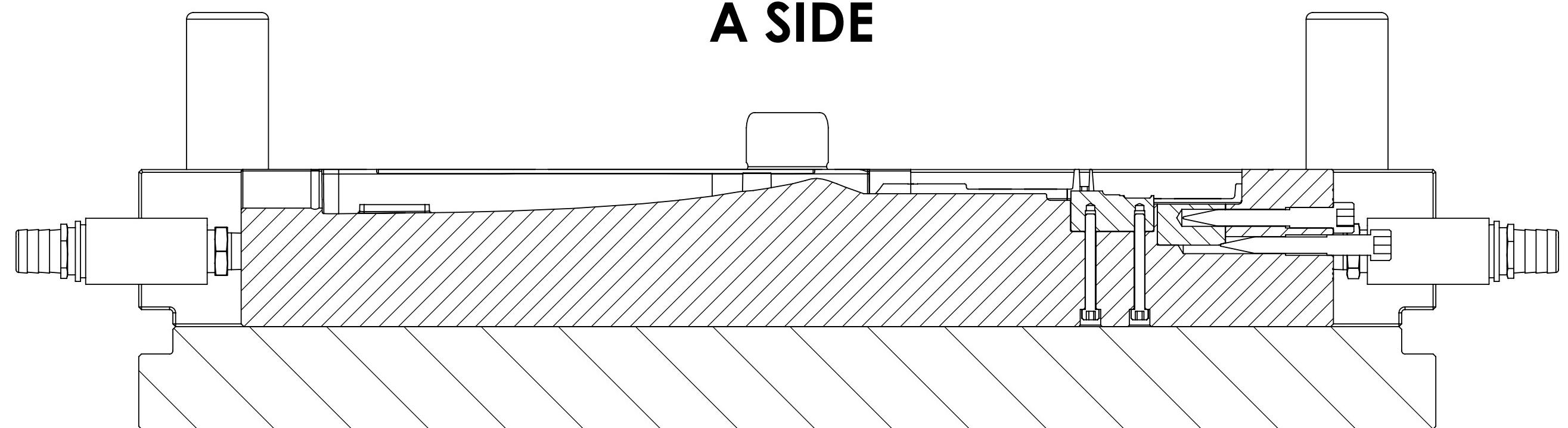
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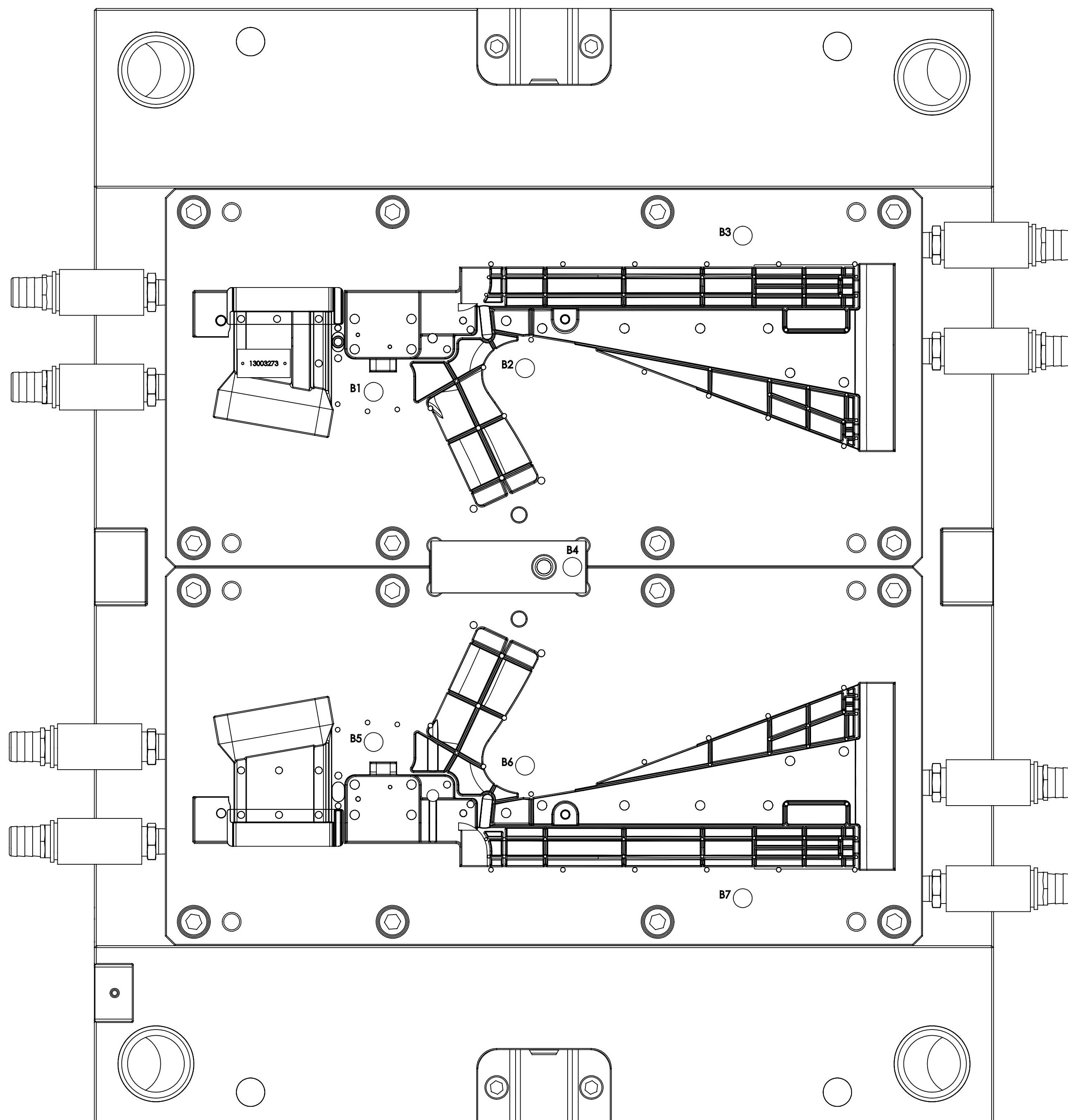
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A SIDE



B SIDE



FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		Customer: A	Part Name: KP15 RECIEVER	Part Rev. B											
.XX	$\pm .01$														
.XXX	$\pm .001$	ALL SCREWS		Matt./Shrinkage		Designed By	R.SPERRY		Detailed By	R.SPERRY		App'd By	-		
.XXXX	$\pm .0005$	ALL EJECTORS		# of Cav.		Date:	11/1/2021		Dwg. Rev.	B		Size	D		
ALL WATER, AIR, HYD. LINES		Scale:		1:2		Filename:	3 of 47		Sheet	KEA001259					

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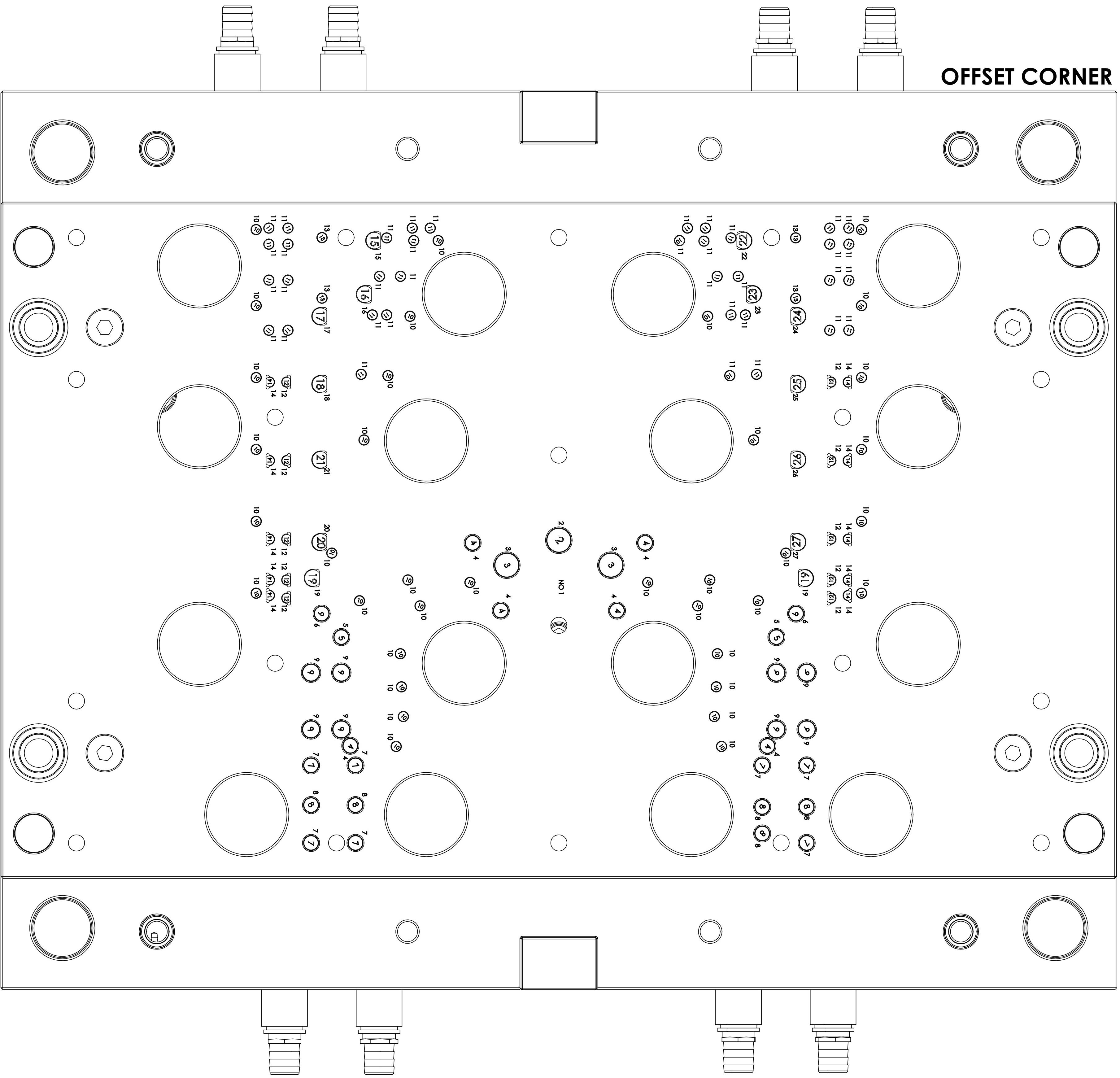
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FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	.XX	$\pm .01$	Customer: A	Part Name: KP15 RECIEVER
	.XXX	$\pm .001$		
	.XXXX	$\pm .0005$		
ALL SCREWS	.XXX	$\pm .005$		
ALL EJECTORS	.XXX	$\pm .002$	Part Number: RECIEVER	Part Rev. B
ALL WATER, AIR, HYD. LINES	.XX	$\pm .01$	Matt./Shrinkage	Designed By R.SPERRY
ANGULAR TOLERANCE	XX°	$\pm 1°$	# of Cav. 2	Detailed By R.SPERRY
	XX.X°	$\pm 00.5°$	Date: 11/1/2021	App'd By -
	XX.XX°	$\pm 00.05°$	Scale: 2:3	Dwg. Rev. B
			Filename:	Size D
				Sheet 4 of 47

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JOB#7801

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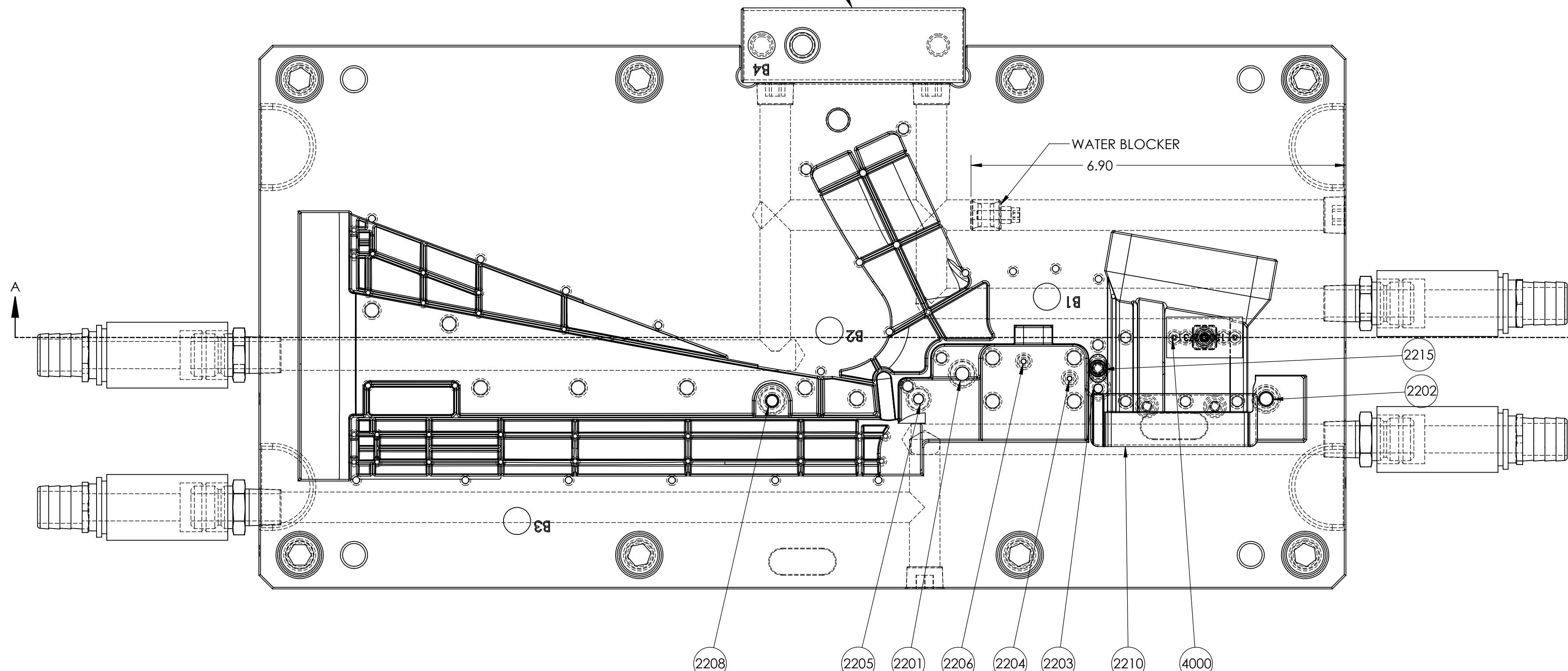
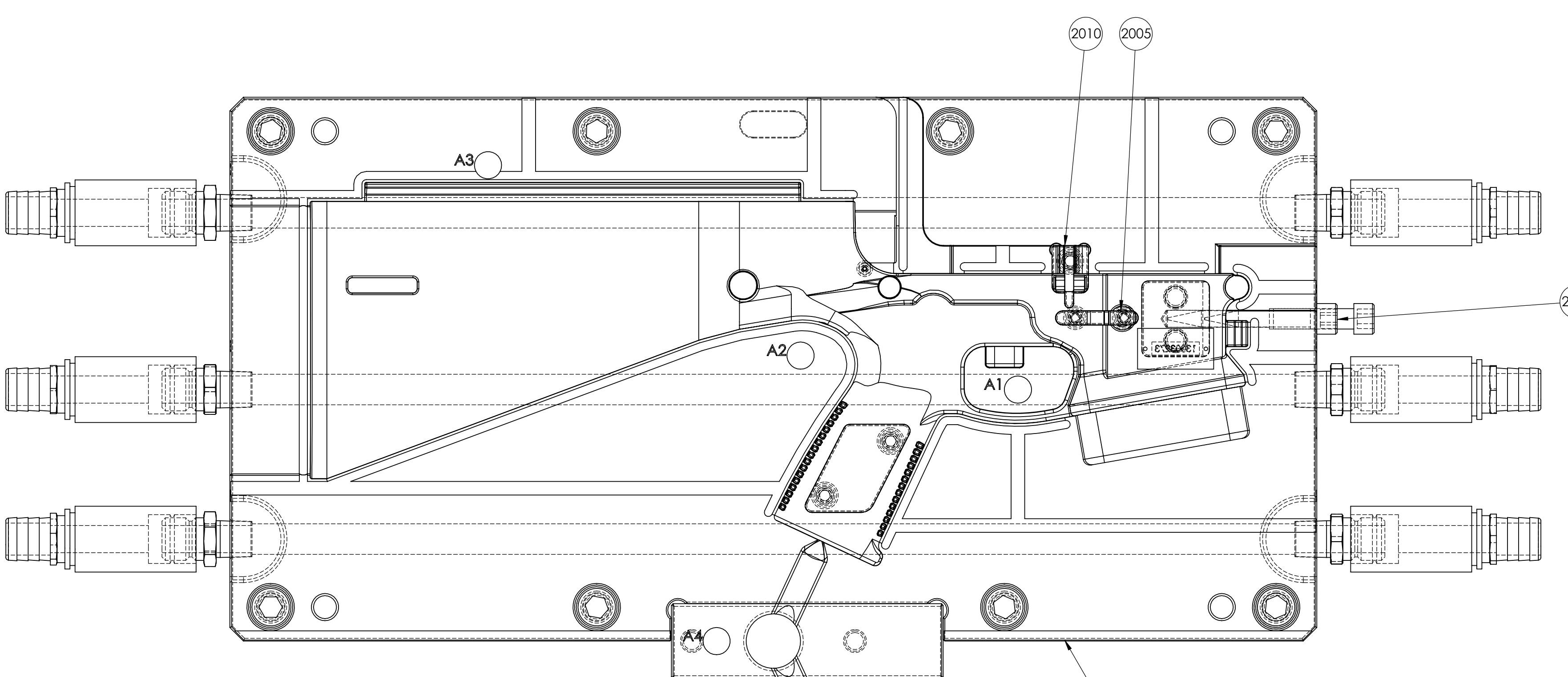
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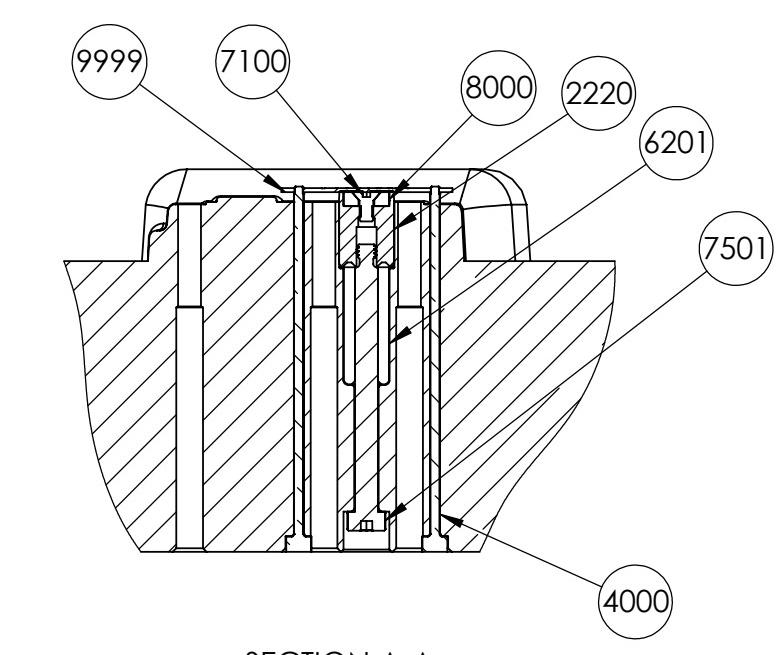
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DETAIL NUMBER	SHEET	QTY.	SPARES	OVER-RUN	Rev.	DESCRIPTION	STOCK SIZE	SOURCE	VENDOR	MATERIAL/PART NO.	SW-File Name
2000	1	0	0	A		NOFIN CAVITY	20.000 X 10.000 X 2.8800	MW	-	H13	NOFIN-2000
2005	1	0	0	A		INSERT	.15254 X 2.6270 X .7407	MW	-	H13	NOFIN-2005
2010	1	1	0	A		SO INSERT	.11492 X .6700 X 1.0667	MW	-	H13	NOFIN-2010
2015	1	0	0	A		PIN	.078 DIA X 2.3239	MW	-	P6-4	NOFIN-2015
2100	1	0	0	A		LOGO INSERT	.19326 X 1.6250 X 1.3949	MW	-	P20	NOFIN-2100
2150	1	0	0	A		SN INSERT	1.2500 X 1.400 X .7901	MW	-	P20	NOFIN-2150
2200	1	0	0	A		NOFIN CORE	20.000 X 10.000 X 3.0886	MW	-	S7	NOFIN-2200
2201	1	0	0	A		PIN	.250 DIA X 2.8263L	-	PCS	P17-6	NOFIN-2201
2202	1	0	0	A		PIN	.281 DIA X 2.9542L	-	PCS	P19-6	NOFIN-2202
2203	1	0	0	A		PIN	.172 DIA X 2.8363	-	PCS	P12-6	NOFIN-2203
2204	1	0	0	A		PIN	.094 DIA X 2.9466	-	PCS	P7-6	NOFIN-2204
2205	1	0	0	A		PIN	.188 DIA X 2.8382	-	PCS	P13-6	NOFIN-2205
2206	1	0	1	A		PIN	.094 DIA X 2.8263	-	PCS	P7-6	NOFIN-2206
2207	2	1	0	A		SN LOCATOR	3/8-16 X 2.750	MW	-	SHCS 3/8-16 X 2.75	SN INSERT BOLT
2208	1	0	0	A		PIN	.250 DIA X 2.4451	-	PCS	P17-6	NOFIN-2208
2210	1	0	0	A		INSERT	.0654 X .9744 X 1.0366	MW	-	S7	NOFIN-2210
2215	1	0	0	A		INSERT	.5180 X .3204 X .8962	MW	-	S7	NOFIN-2215
2220	1	0	0	A		INSERT	.4514 X .4514 X .6250	MW	-	420SS	NOFIN-2220
3100	1	0	0	A		RUNNER BLK	4.2500 X 1.3750 X 2.3800	MW	-	S7	RUNNER BLOCK
3200	1	0	0	A		SPRUCE BLOCK	5.0000 X 1.3750 X 2.3800	MW	-	H13	SPRUCE BLOCK
4000	2	0	0	A		SN PIN	.078 DIA X 2.9900	MW	PCS	P6-6	SN-PIN
5200	10	-	-	-		CONNECTOR	3/8 NPT	-	PCS	PC-553	PC-553
5300	4	-	-	-		PIPE PLUG	3/8 NPT	-	PCS	WPB-40	PIPE PLUG
5500	1	-	-	-		WATER BLOCK	WB562	-	PCS	WB562	WB562
6201	1	0	0	-		DIE SPRING	3/8 OD X 1.00	-	PCS	04-M-10	MED DUTY BLUE SPRING
7000	3	0	0	-		SHCS	10-32 X 2	-	MMC	10-32 X 2.00	SHCS
7001	10	0	0	-		SHCS	1/2-13 X 2.750	-	MMC	1/2-13 X 2.750	SHCS
7002	2	0	0	-		SHCS	10-32 X 1.750	-	MMC	10-32 X 1.750	SHCS
7003	1	0	0	-		SHCS	1/4-20 X 2.00	-	MMC	1/4-20 X 2.00	SHCS
7004	6	0	0	-		SHCS	1/2-13 X 3.250	-	MMC	1/2-13 X 3.250	SHCS
7005	2	0	0	-		SHCS	1/4-20 X 1.00	-	MMC	1/4-20 X 1.00	SHCS
7100	1	0	0	-		FHCS	#4-40 X .250	-	MMC	#4-40 X .250	P_FHCS
7501	1	0	0	-		SHSB	8-32 3/16 BODY X 2.00	-	MMC	91259A413	91259A413 SHSB
7600	4	-	-	-		TUBE DOWEL	TD7-500	-	PCS	TD7-500	TD7-500
8000	1	1	0	-		MAGNET	.375 DIA X .125	MB	K&J	R622CS-N	R622CS-N MAGNET
9999	1	-	-	-		SN PLATE	CUSTOMER SUPPLIED	KEA	-	SUPPLIED	Serial PLate



MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	
.XX	$\pm .01$
.XXX	$\pm .001$
.XXXX	$\pm .0005$
ALL SCREWS	
.XXX	$\pm .005$
ALL EJECTORS	
.XXX	$\pm .002$
ALL WATER, AIR, HYD. LINES	
.XX	$\pm .01$
ANGULAR TOLERANCE	
XX°	$\pm 1^\circ$
$XX.X^\circ$	$\pm 00.5^\circ$
$XX.XX^\circ$	$\pm 00.05^\circ$

Customer: **A** Part Name: **KP15 RECIEVER**
 Part Number: **RECIEVER** Part Rev. **B**
 Matt/Shrinkage **30GF/.003** Designed By **R.SPERRY** Detailed By **R.SPERRY** Appv'd By **-**
 # of Cav. **2** Date: **11/1/2021** Dwg. Rev. **B** Size **D**
 Scale: **2:3** Filename: **2** Sheet **5 of 47**

SPERRY DESIGN SERVICES
 1245 W Gascon Rd San Tan Valley AZ 85143

FINAL RELEASE
06/09/21

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JOB#7801

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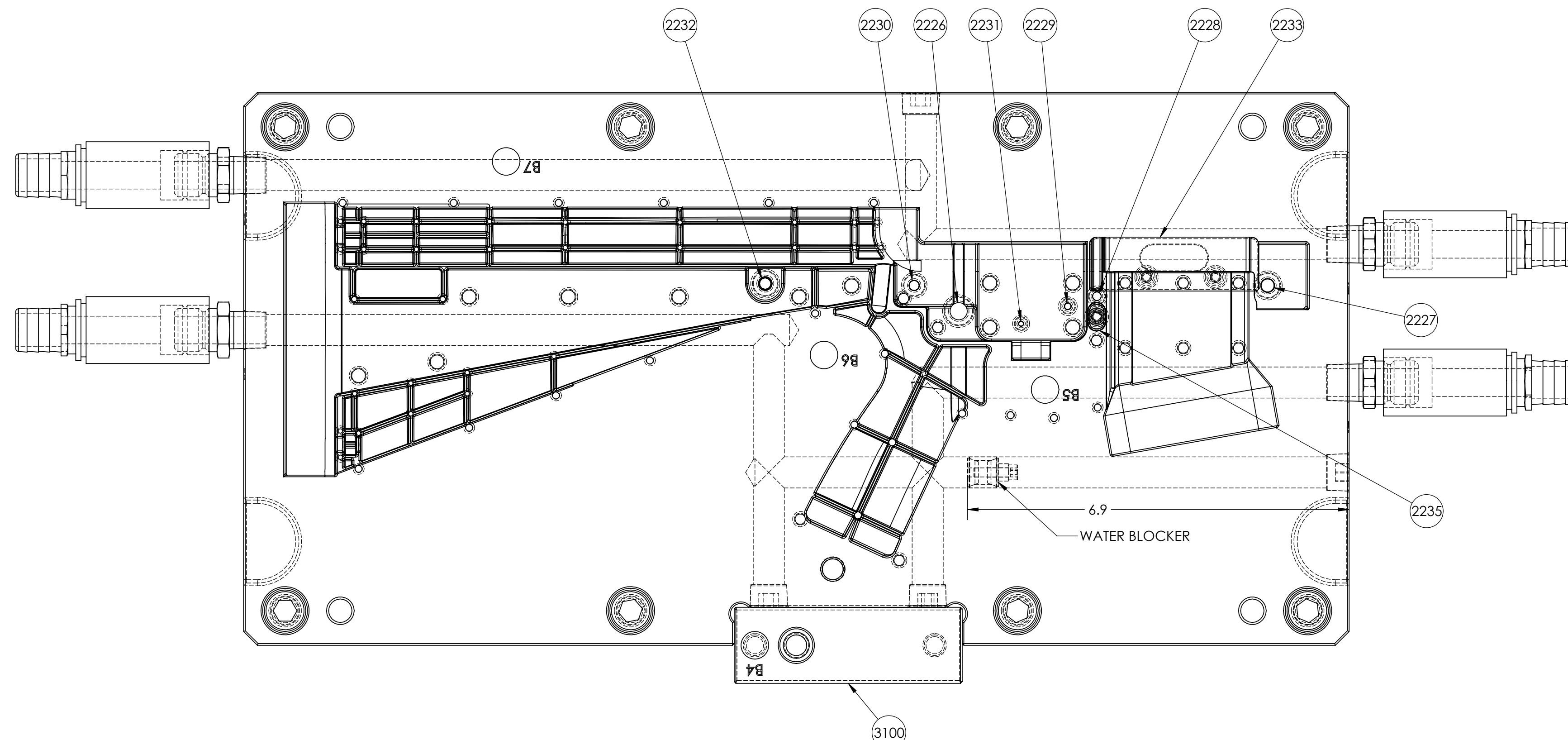
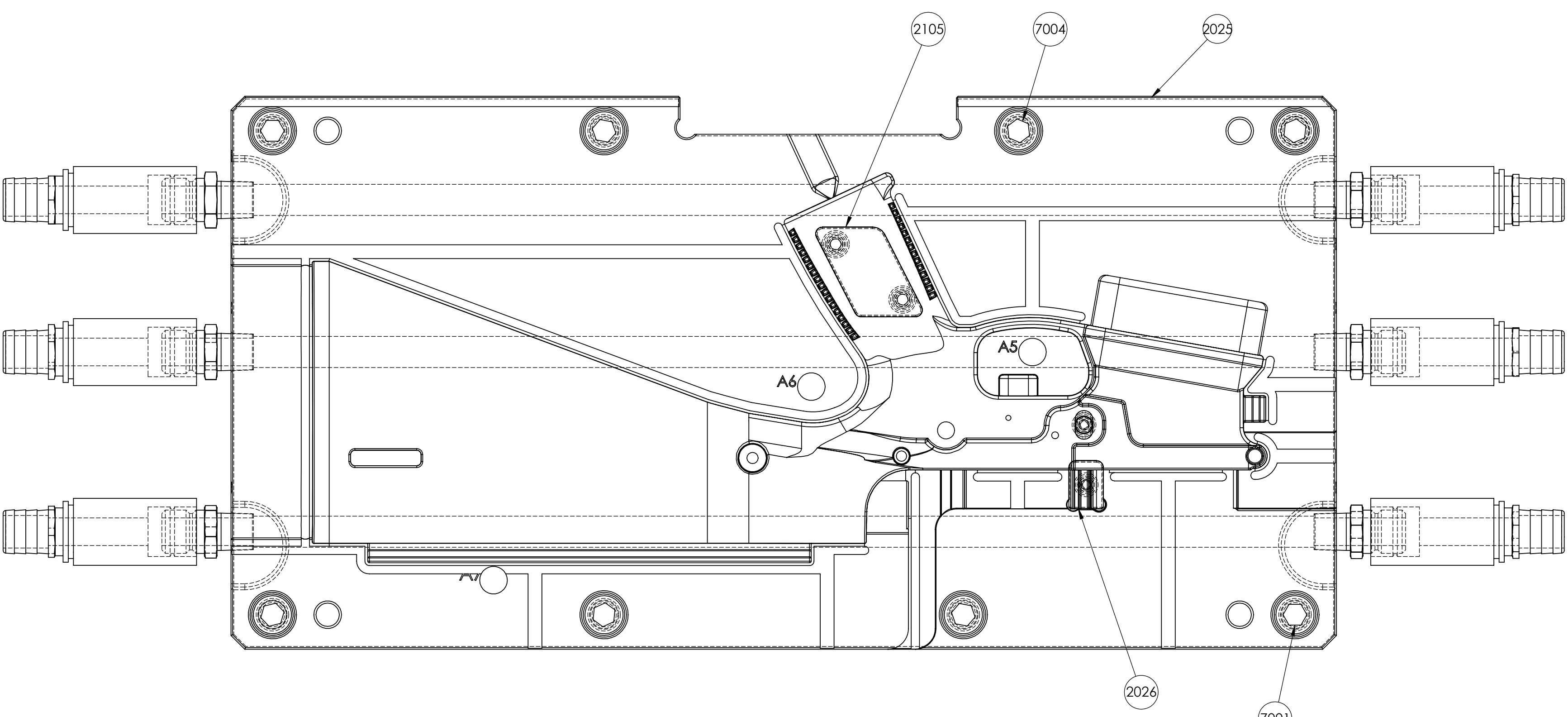
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DETAIL NUMBER	SHEET	QTY.	SPARES	OVER-RUN	Rev.	DESCRIPTION	STOCK SIZE	SOURCE	VENDOR	MATERIAL/PART NO.	SW-File Name
2025	1	0	0	A		SM CAVITY	20.0000 X 10.0000 X 2.8800	MW	-	H13	SMOOTH-2025
2026	1	1	0	A		SO INSERT	.8750 X .6250 X 1.000	MW	-	H13	SMOOTH-2026
2105	1	0	0	A		LOGO INSERT	1.9326 X 1.6250 X 1.3952	MW	-	P20	SMOOTH-2105
2225	1	0	0	A		SM CORE	20.0000 X 10.0000 X 3.1329	MW	-	S7	SMOOTH-2225
2226	1	0	0	A		PIN	.313 DIA X 2.8263	-	PCS	P21-6	SMOOTH-2226
2227	1	0	0	A		PIN	.254 DIA X 2.9216	-	PCS	P17-6	SMOOTH-2227
2228	1	0	0	A		PIN	.156 DIA X 2.4251	-	PCS	P11-6	SMOOTH-2228
2229	1	0	0	A		PIN	.125 DIA X 2.9467	-	PCS	P9-6	SMOOTH-2229
2230	1	0	0	A		PIN	.187 DIA X 2.8232	-	PCS	P13-6	SMOOTH-2230
2231	1	0	0	A		PIN	.094 DIA X 2.8263	-	PCS	P7-6	SMOOTH-2231
2232	1	0	0	A		PIN	.250 X 2.4452	-	PCS	P17-6	SMOOTH-2232
2233	1	0	0	A		INSERT	3.0660 X .9746 X 1.0366	MW	-	S7	SMOOTH-2233
2235	1	0	0	A		INSERT	.5227 X .3251 X .5000	MW	-	S7	SMOOTH-2235
3100	1	0	0	A		RUNNER BLK	4.2500 X 1.3750 X 2.3800	MW	-	S7	RUNNER BLOCK
5200	10	-	-	-		CONNECTOR	3/8 NPT	-	PCS	PC-553	PC-553
5300	4	-	-	-		PIPE PLUG	3/8 NPT	-	PCS	WPB-40	PIPE PLUG
5500	1	-	-	-		WATER BLOCK	WB562	-	PCS	WB562	WB562
7000	5	0	0	-		SHCS	10-32 X 2	-	MMC	10-32 X 2.00	SHCS
7001	10	0	0	-		SHCS	1/2-13 X 2.750	-	MMC	1/2-13 X 2.750	SHCS
7004	6	0	0	-		SHCS	1/2-13 X 3.250	-	MMC	1/2-13 X 3.250	SHCS
7005	2	0	0	-		SHCS	1/4-20 X 1.00	-	MMC	1/4-20 X 1.00	SHCS
7600	4	-	-	-		TUBE DOWEL	TD7-500	-	PCS	TD7-500	TD7-500
2027	1	0	0	A		CAVITY INSERT	.5128 X .3152 X 1.0667	MW	-	S7	SMOOTH-2027

FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		Customer: A	Part Name: KP15 RECIEVER
.XX	±.01		
.XXX	±.001		
.XXXX	±.0005		
ALL SCREWS			
.XXX	±.005	Part Rev. B	
ALL EJECTORS			
.XXX	±.002		
ALL WATER, AIR, HYD. LINES			
.XX	±.01		Detailed By: R.SPERRY
ANGULAR TOLERANCE			
XX°	±1°		
XX.X°	±00.5°		
XX.XX°	±00.05°		
Scale:	2:3	App'd By -	
Matt./Shrinkage	Designed By: 30GF/.003 R.SPERRY		
# of Cav.	Date: 11/1/2021		
Dwg. Rev.	Dwg. Rev. B		
Filename:	Sheet D		

SPERRY
DESIGN SERVICES
1245 W Gascon Rd San Tan Valley AZ 85143

RECIEVER

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JOB#7801

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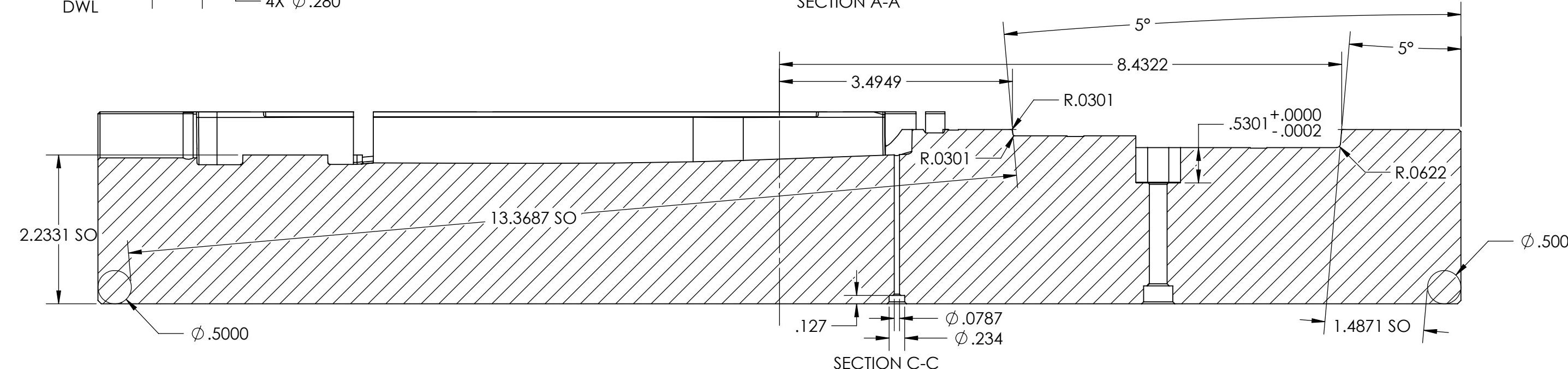
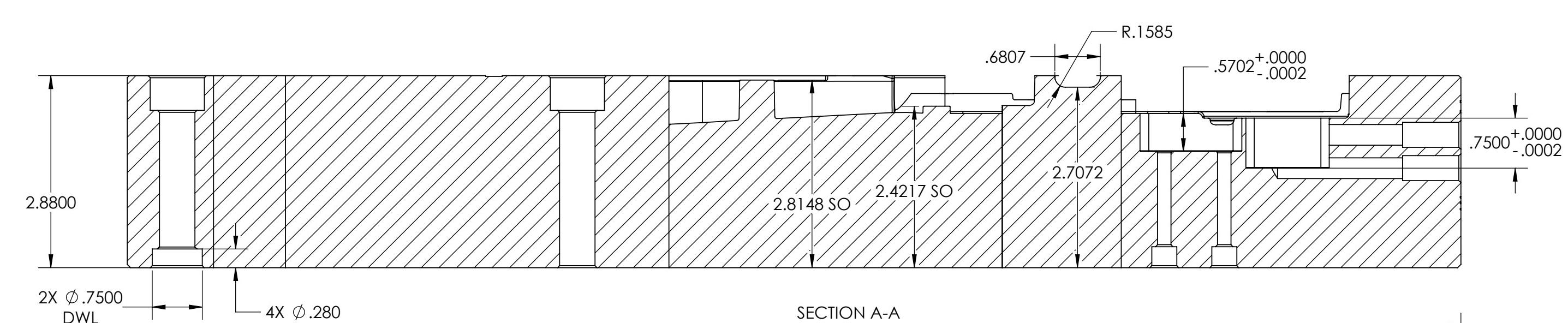
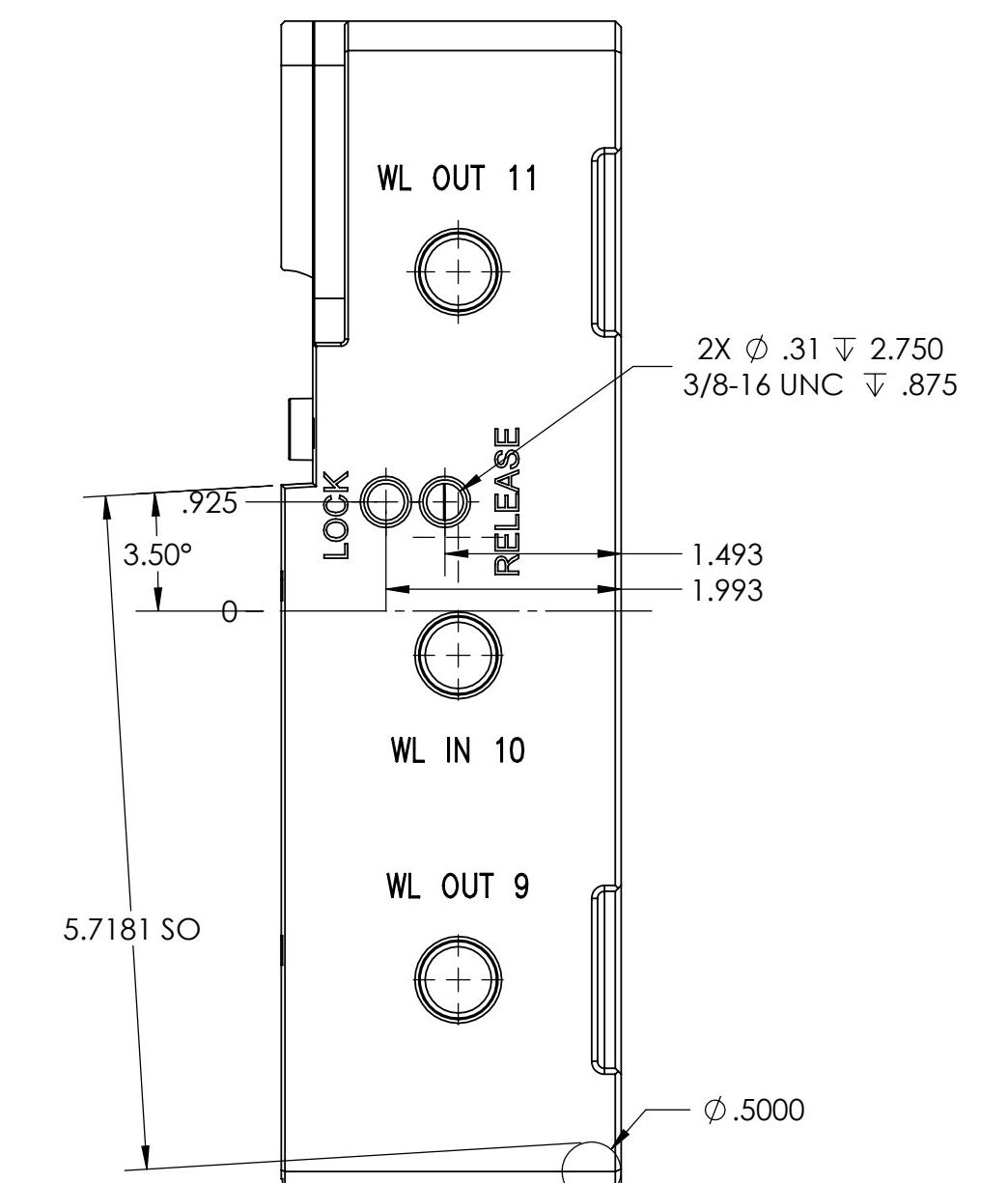
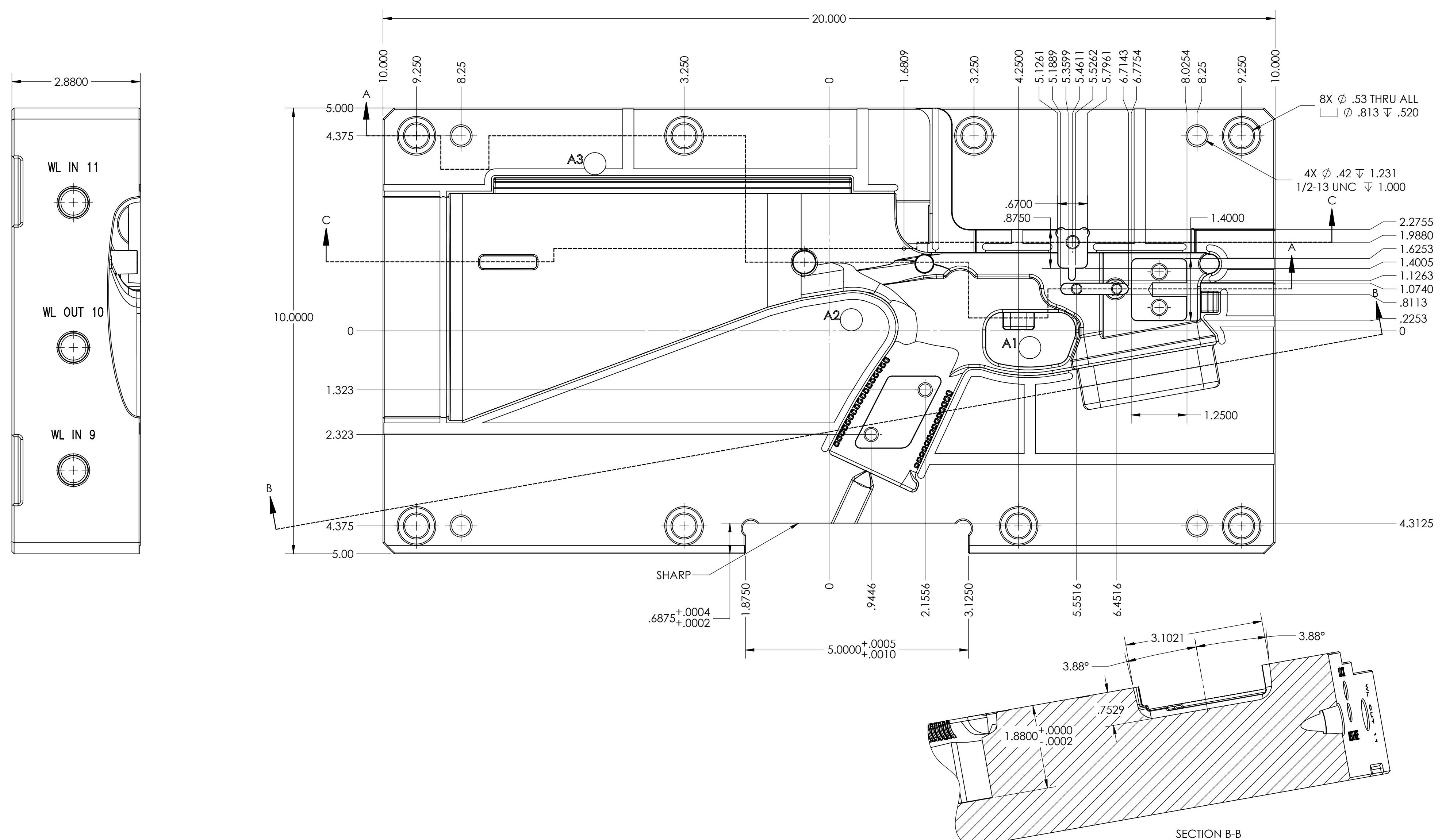
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PART: NOFIN CAVITY
2000
QTY: 1 SPARES:0
SCALE: 2:3
SIZE: 20.000 X 10.000 X 2.8800
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: -
PLATING: NONE
FILENAME: NOFIN-2000

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	
.XX	±.01
.XXX	±.001
.XXXX	±.0005
ALL SCREWS	
.XXX	±.005
ALL EJECTORS	
.XXX	±.002
ALL WATER, AIR, HYD. LINES	
.XX	±.01
ANGULAR TOLERANCE	
XX°	±1°
XX.X°	±00.5°
XX.XX°	±00.05°

Customer: A Part Name: KP15 RECIEVER
Part Rev. B Part Number: RECIEVER
Designed By R.SPERRY Dwg. Rev. B
Detailed By R.SPERRY Date: 11/1/2021 App'd By -
Size D
Sheet B
Filename: NOFIN-2000
Scale: 2:3
Sheet 7 of 47
Job#7801

FINAL RELEASE
06/09/21

SPERRY
DESIGN SERVICES
1245 W Gascon Rd San Tan Valley AZ 85143

2000, NOFIN CAVITY
KEA001263

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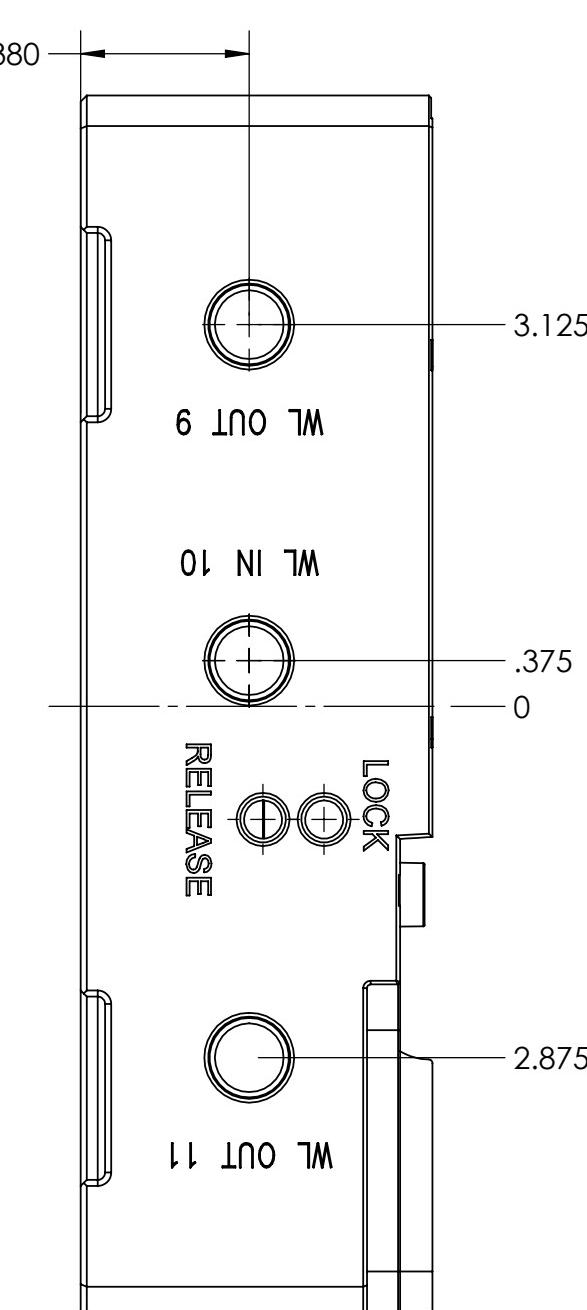
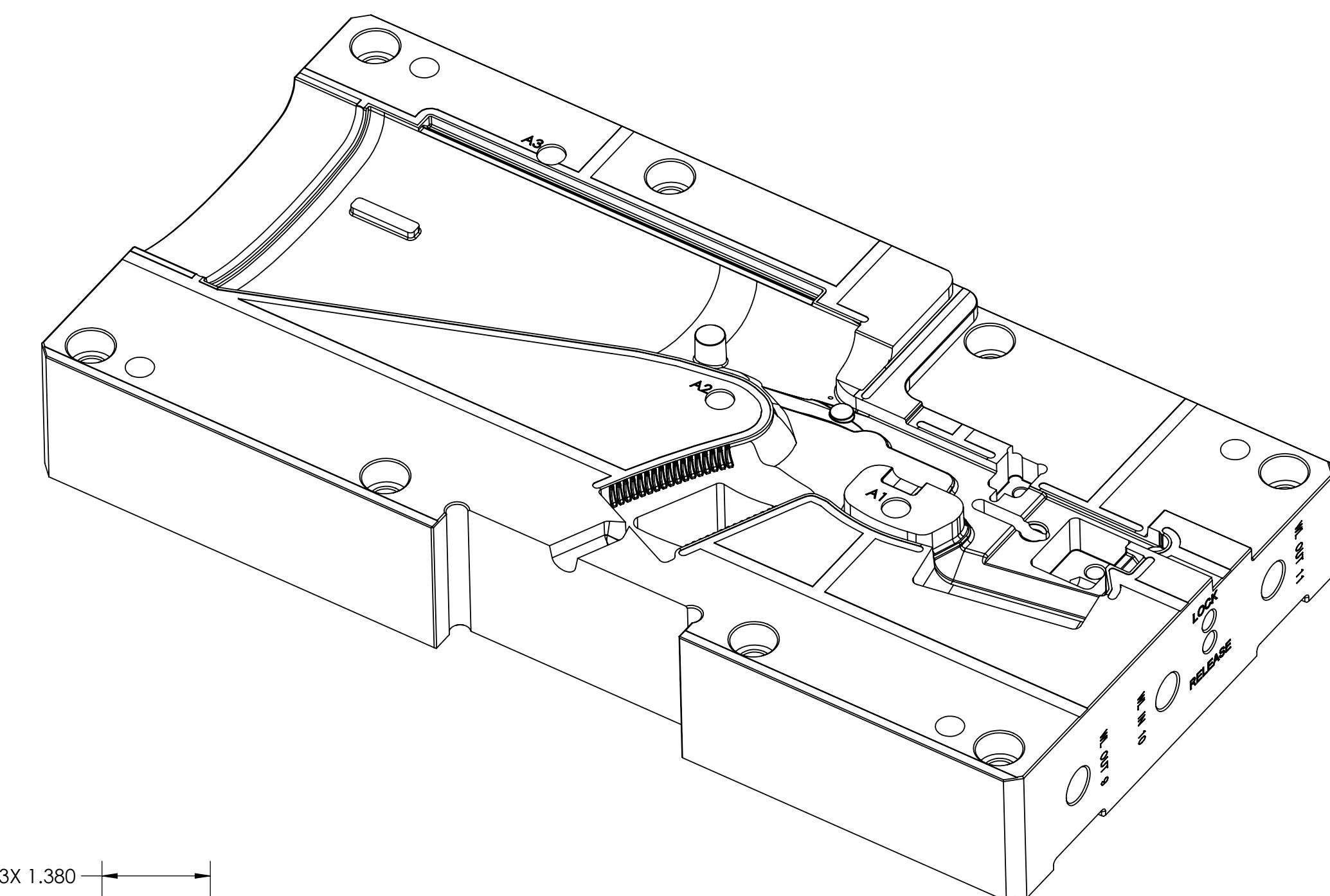
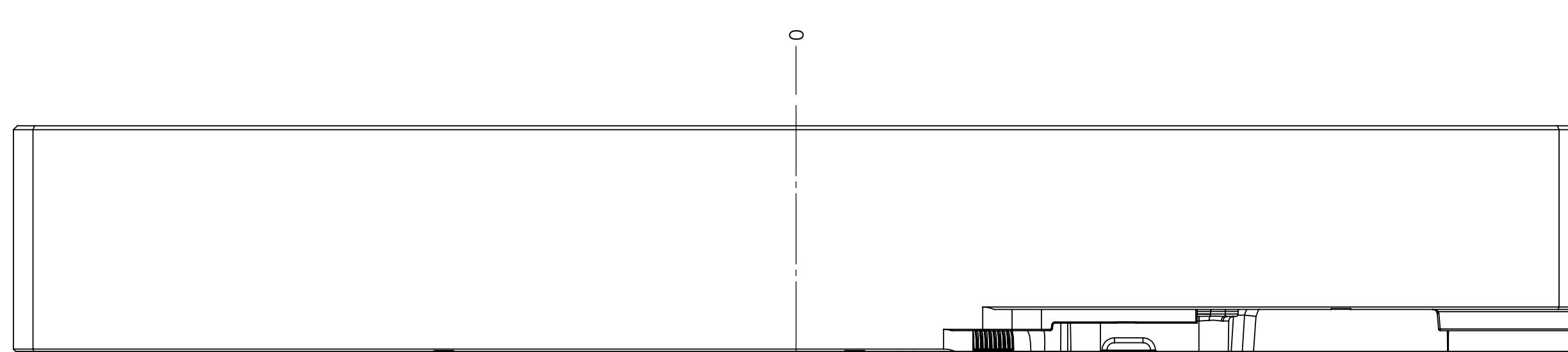
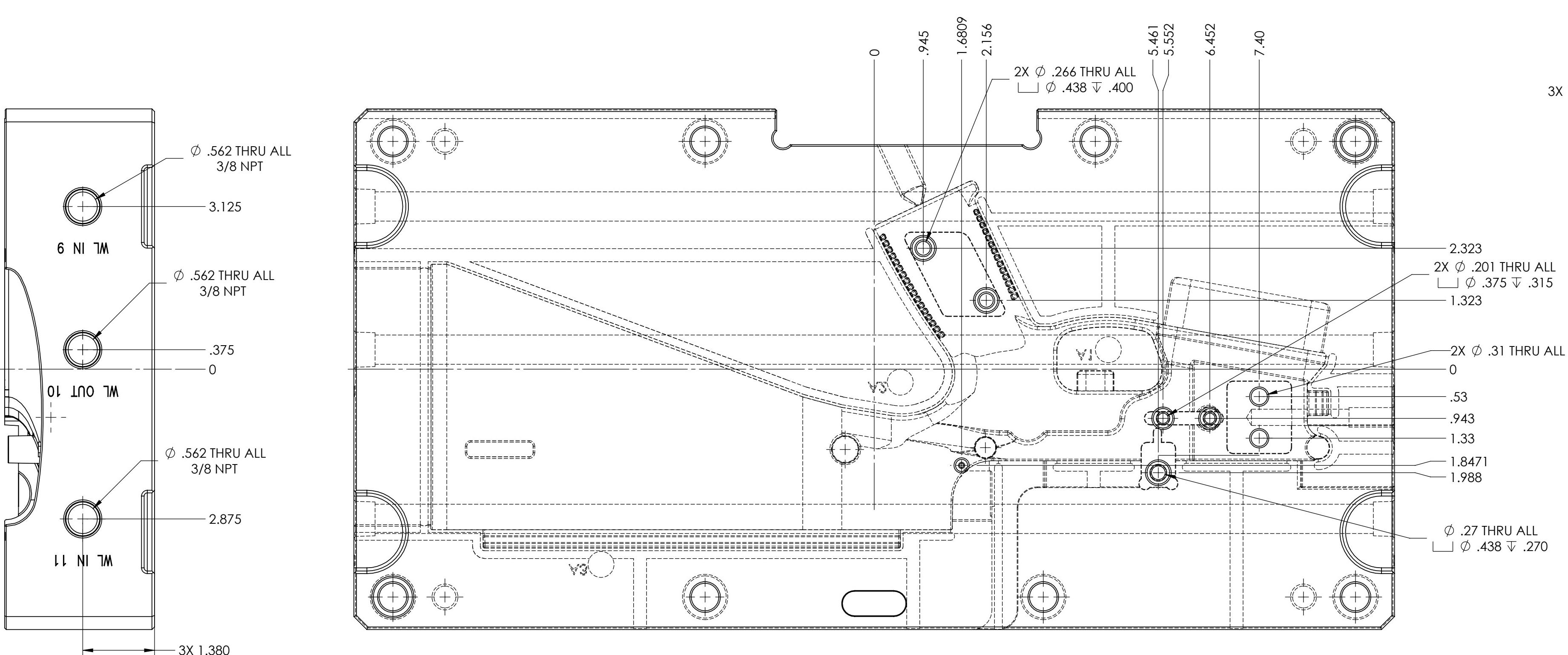
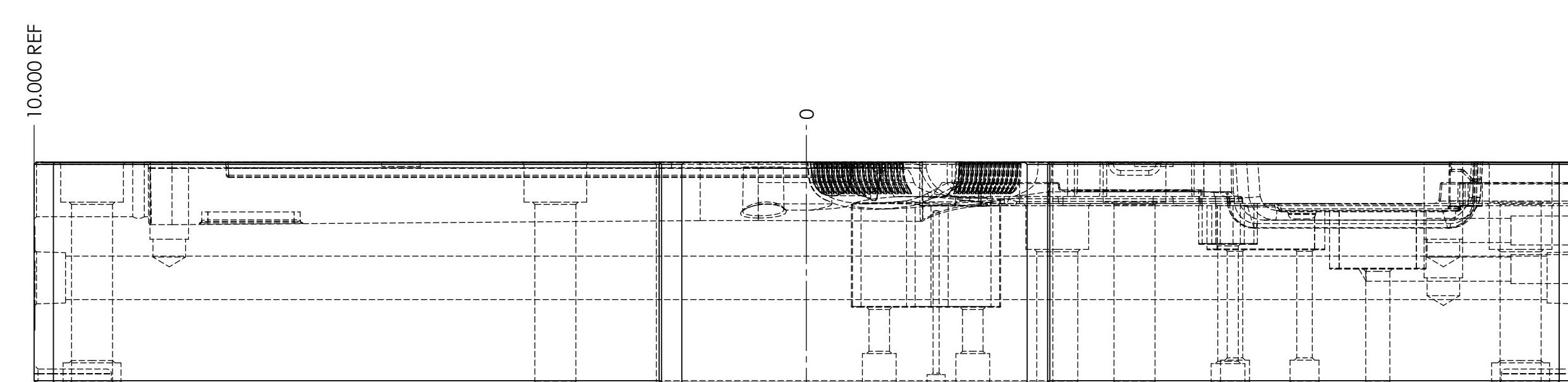
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PART: NOFIN CAVITY
2000
QTY: 1 SPARES:0
SCALE: 2:3
SIZE: 20.000 X 10.000 X 2.8800
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: -
PLATING: NONE
FILENAME: NOFIN-2000

**FINAL RELEASE
06/09/21**

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		Customer: A	Part Name: KP15 RECIEVER	Part Rev. B
.XX	$\pm .01$			
.XXX	$\pm .001$			
.XXXX	$\pm .0005$			
ALL SCREWS				
.XXX	$\pm .005$			
ALL EJECTORS				
.XXX	$\pm .002$			
ALL WATER, AIR, HYD. LINES		Matt./Shrinkage	Designed By	Detailed By
.XX	$\pm .01$		30GF/.003 R.SPERRY	R.SPERRY
ANGULAR TOLERANCE		# of Cav.	Date:	App'd By
XX°	$\pm 1^\circ$	2	11/1/2021	-
XX.X°	$\pm 00.5^\circ$			Dwg. Rev.
XX.XX°	$\pm 00.05^\circ$			Size
Scale:		2:3	Filename:	Sheet
NOFIN-2000				8 of 47

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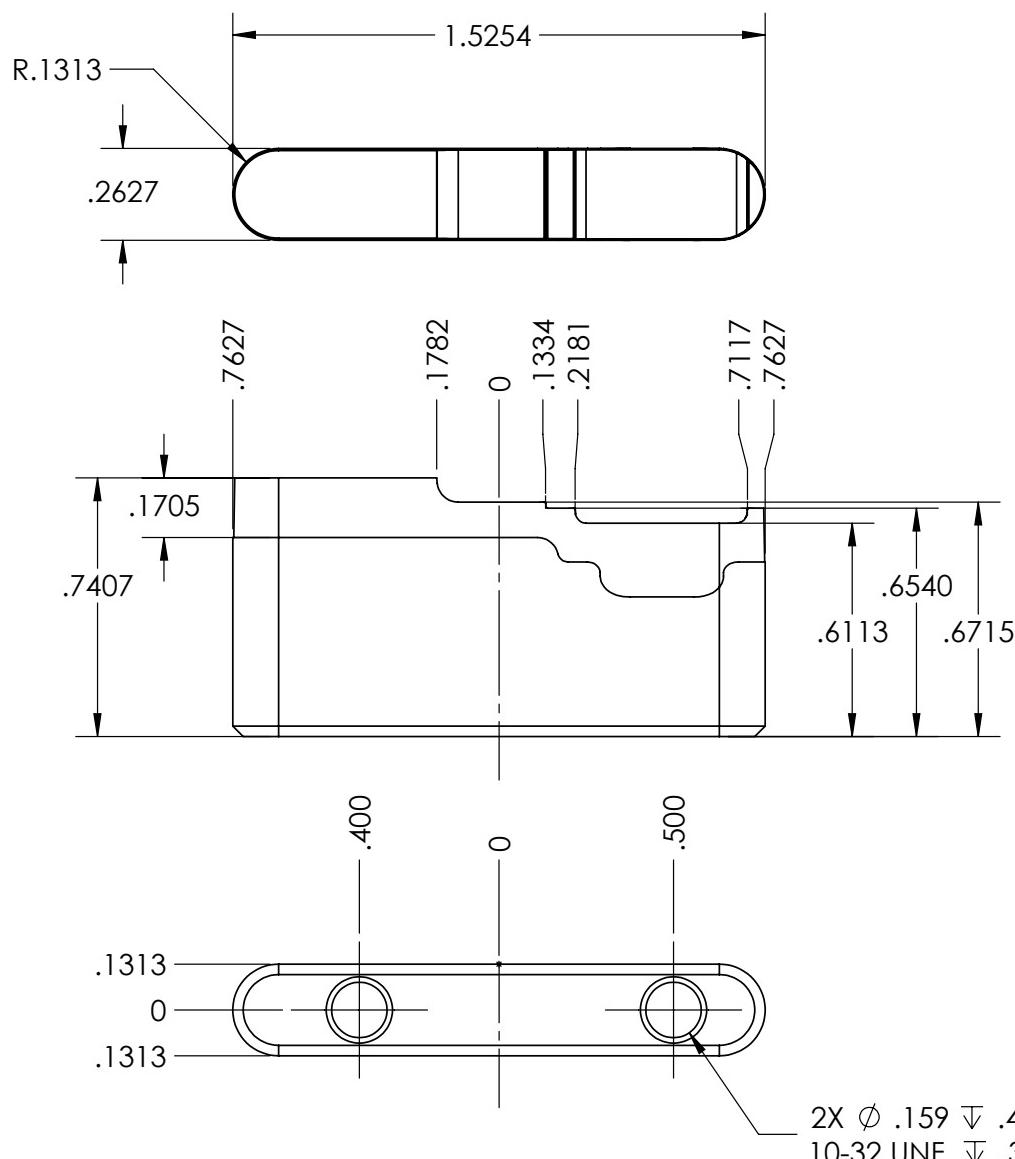
JOB#7801

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2005
PART: INSERT
QTY: 1 SPARES:0
SCALE: 2:1
SIZE: 1.5254 X 2.6270 X .7407
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: NONE
PLATING: NONE
FILENAME: NOFIN-2005

FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd. San Tan Valley AZ 85143	
.XX	±.01	Customer:	Part Name:
.XXX	±.001	KE ARMS	KP15 RECEIVER
.XXXX	±.0005	Part Number:	Part Rev.
ALL SCREWS		RECIEVER	B
.XXX	±.005	Matl./Shrinkage	Detailed By
ALL EJECTORS		30GF/.003	Appv'd By
.XXX	±.003	R.SPERRY	-
ALL WATER, AIR, HYD. LINES		Designed By	Size
.XX	±.01	R.SPERRY	B
ANGULAR TOLERANCE		Date:	11/1/2021
XX°	±1°	# of Cav.	B
XX.X°	±00.5°	Scale:	2:1
XX.XX°	±00.05°	Filename:	NOFIN-2005

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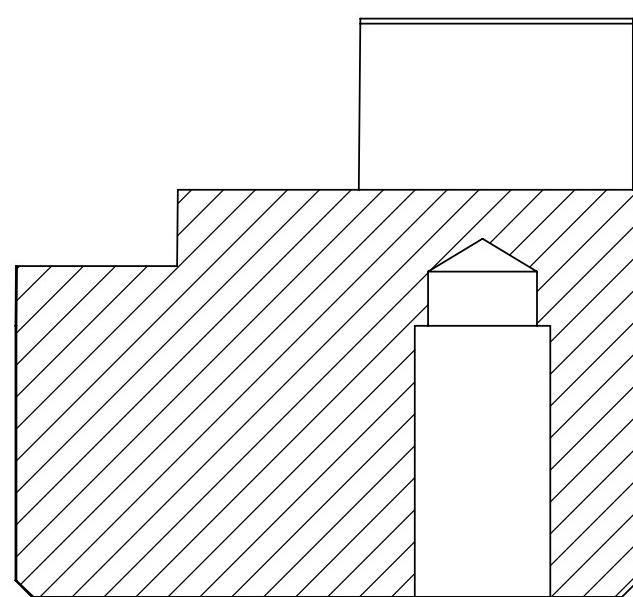
JOB#7801

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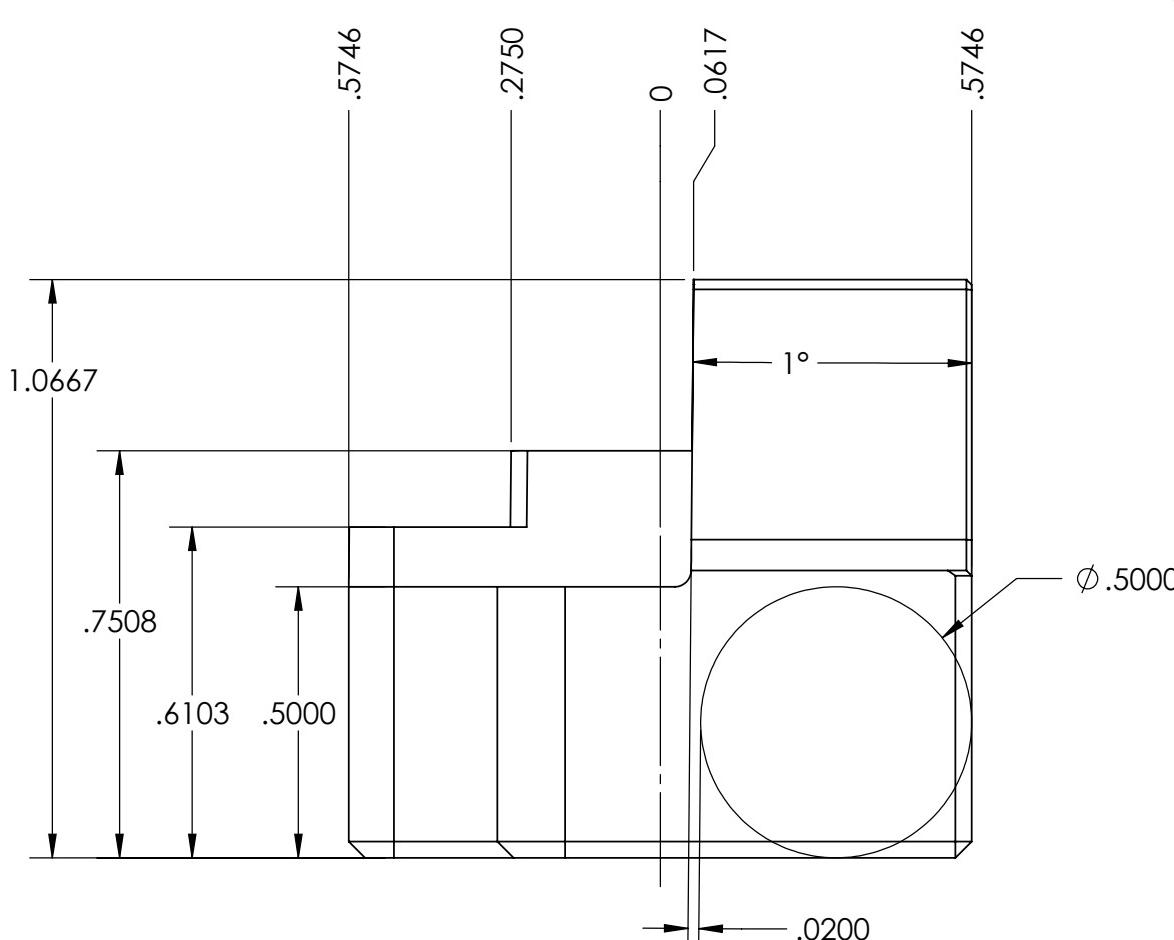
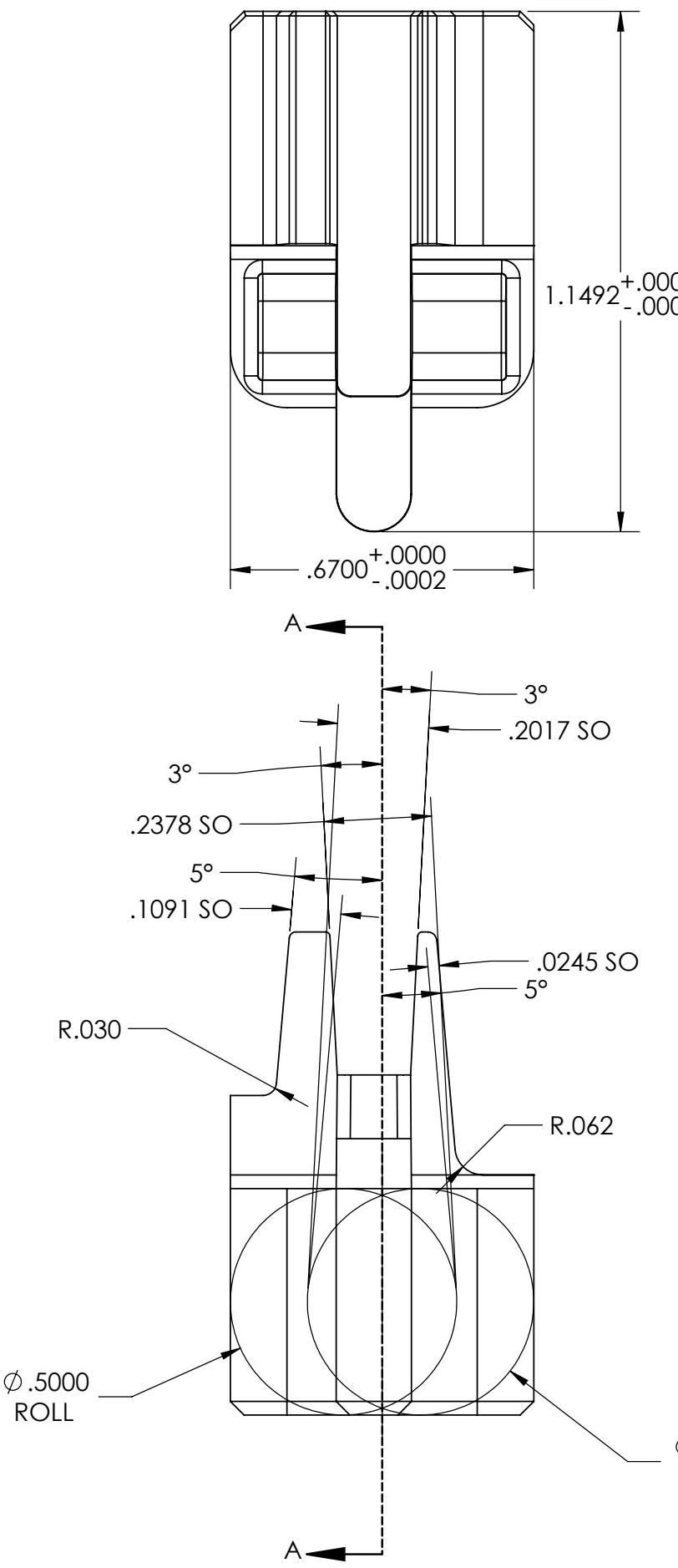
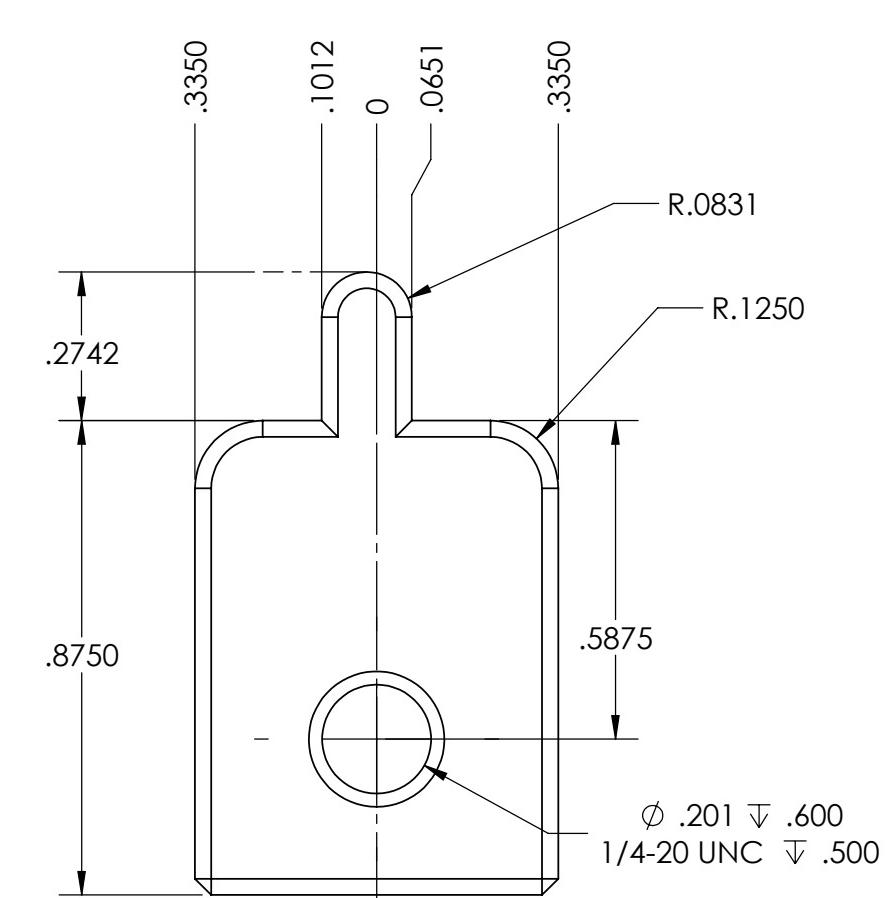
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SECTION A-A



PART: SO INSERT
QTY: 1 SPARES:1
SCALE: 3:1
SIZE: 1.1492 X .6700 X 1.0667
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: NONE
PLATING: NONE
FILENAME: NOFIN-2010

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd. San Tan Valley AZ. 85143				
.XX	$\pm .01$					
.XXX	$\pm .001$					
.XXXX	$\pm .0005$					
ALL SCREWS		Customer: KE ARMS		Part Name: KP15 RECIEVER		
.XXX	$\pm .005$	Part Number: RECIEVER		Part Rev. B		
ALL EJECTORS		Matl./Shrinkage 30GF/.003		Designed By R.SPERRY	Detailed By R.SPERRY	Appv'd By -
ALL WATER, AIR, HYD. LINES		# of Cav. 2	Date: 11/1/2021	Dwg. Rev. B	Size C	
XX°	$\pm 1°$		Scale: 3:1	Filename: NOFIN-2010	Sheet 10 of 47	
XX.X°	$\pm 00.5°$					
XX.XX°	$\pm 00.05°$					

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FINAL RELEASE
06/09/21

SPERRY DESIGN SERVICES

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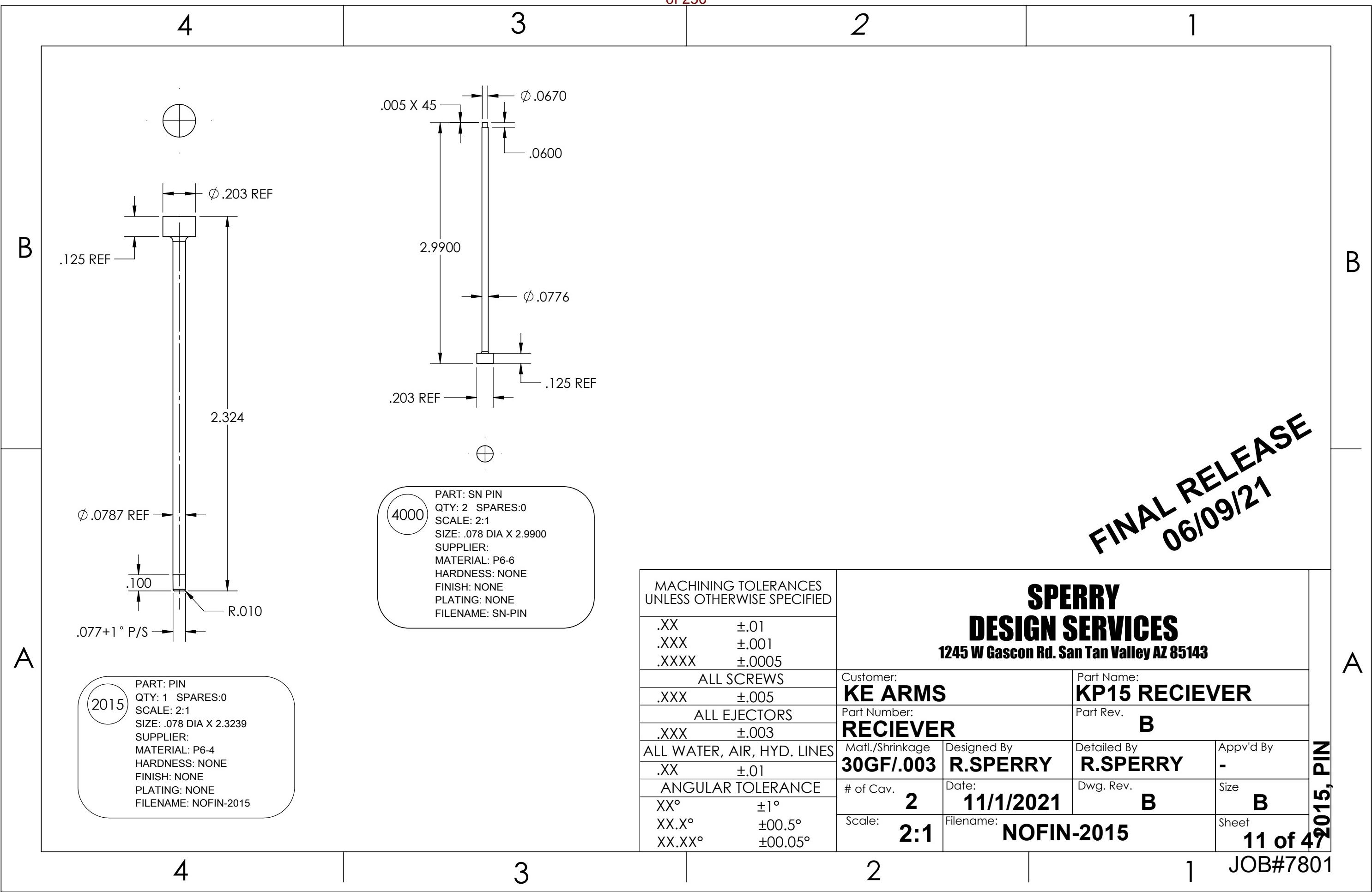
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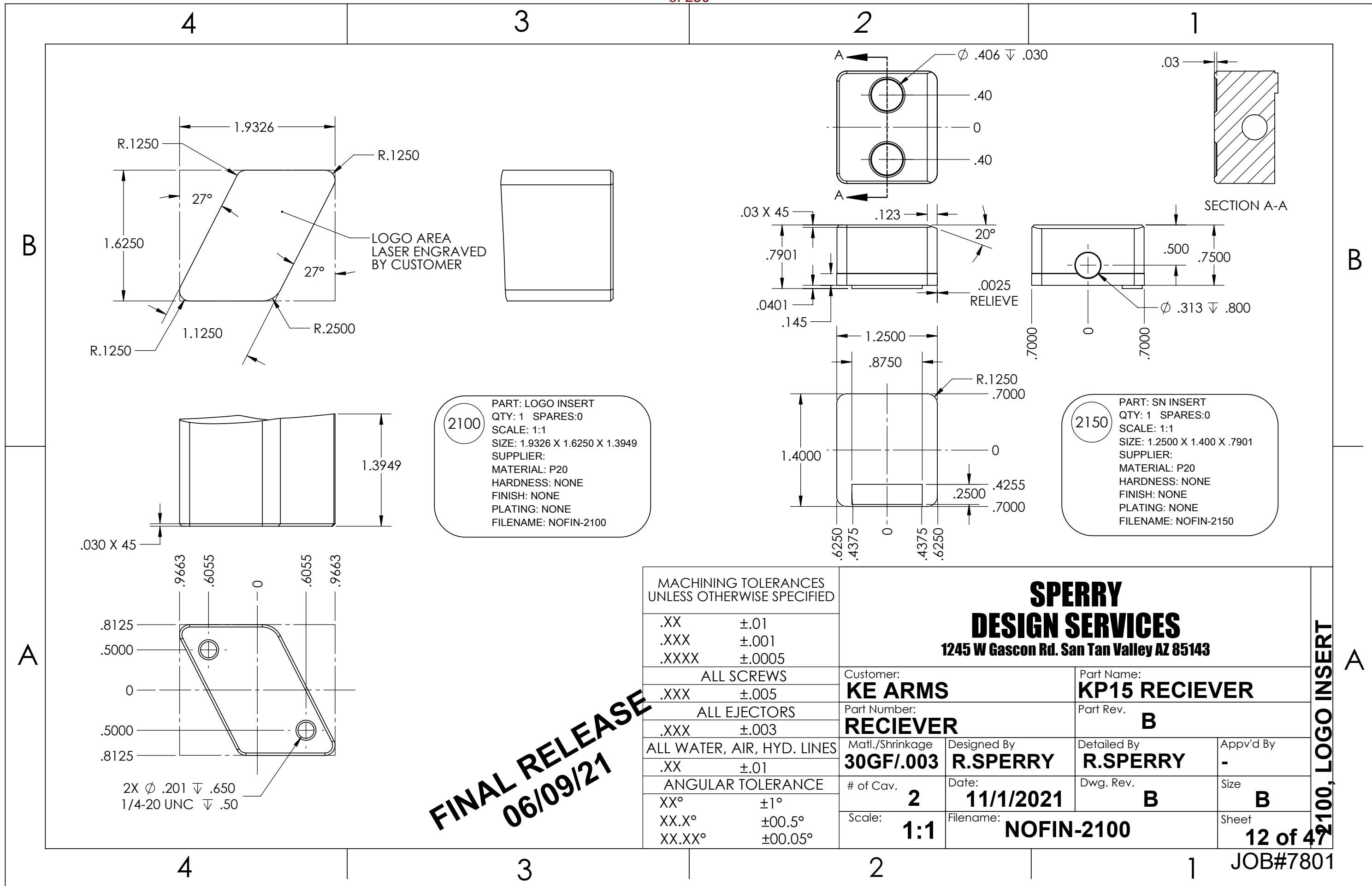
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JOB#7801



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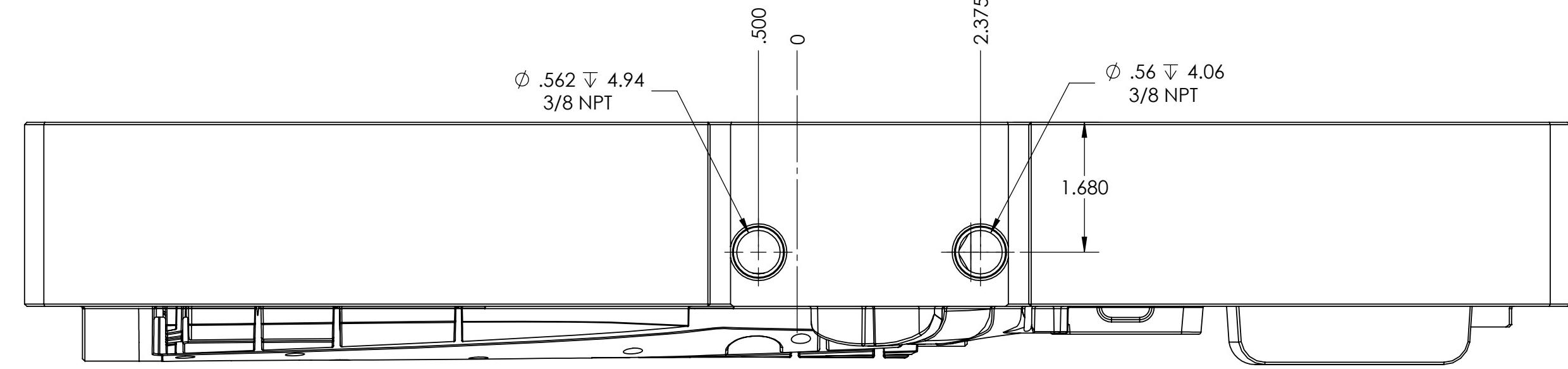
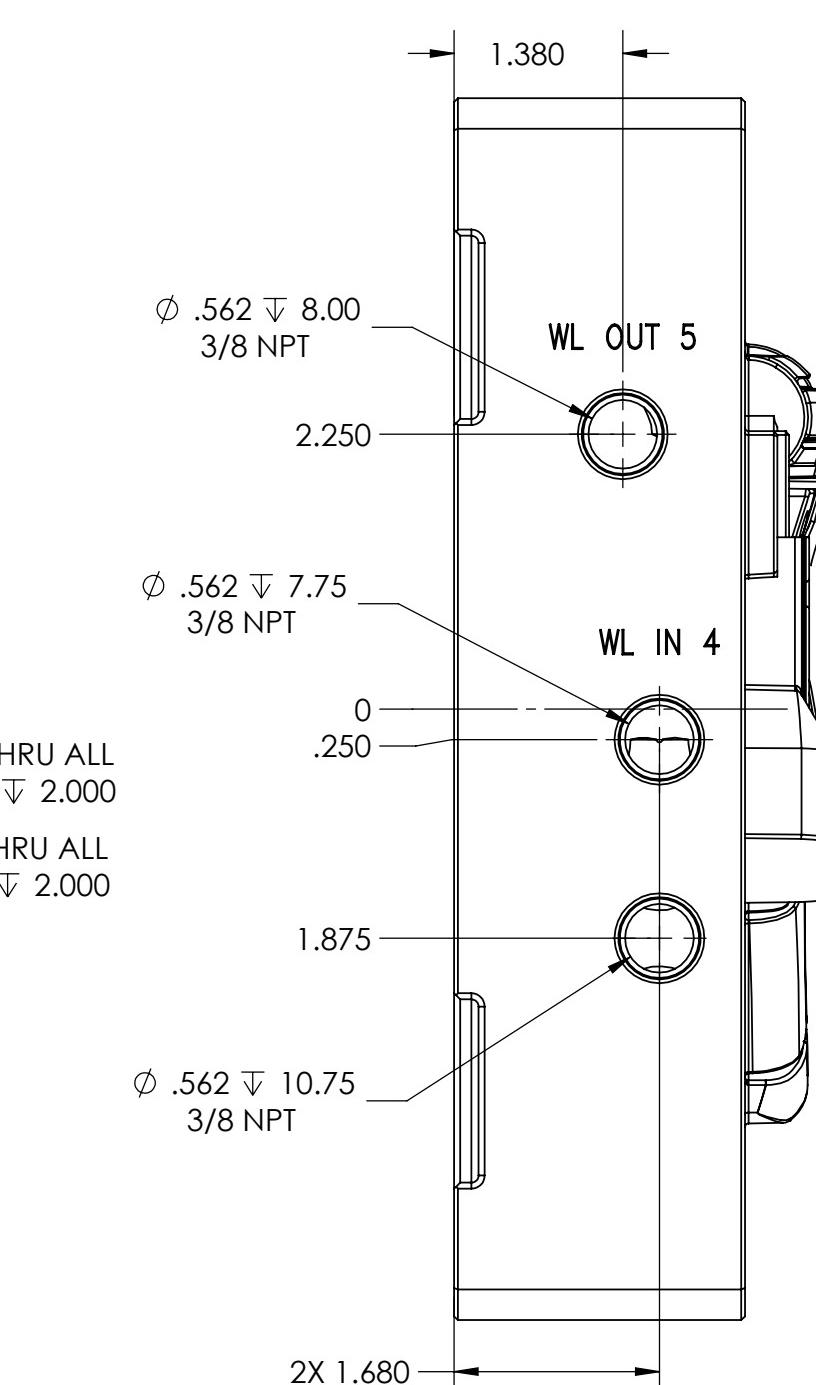
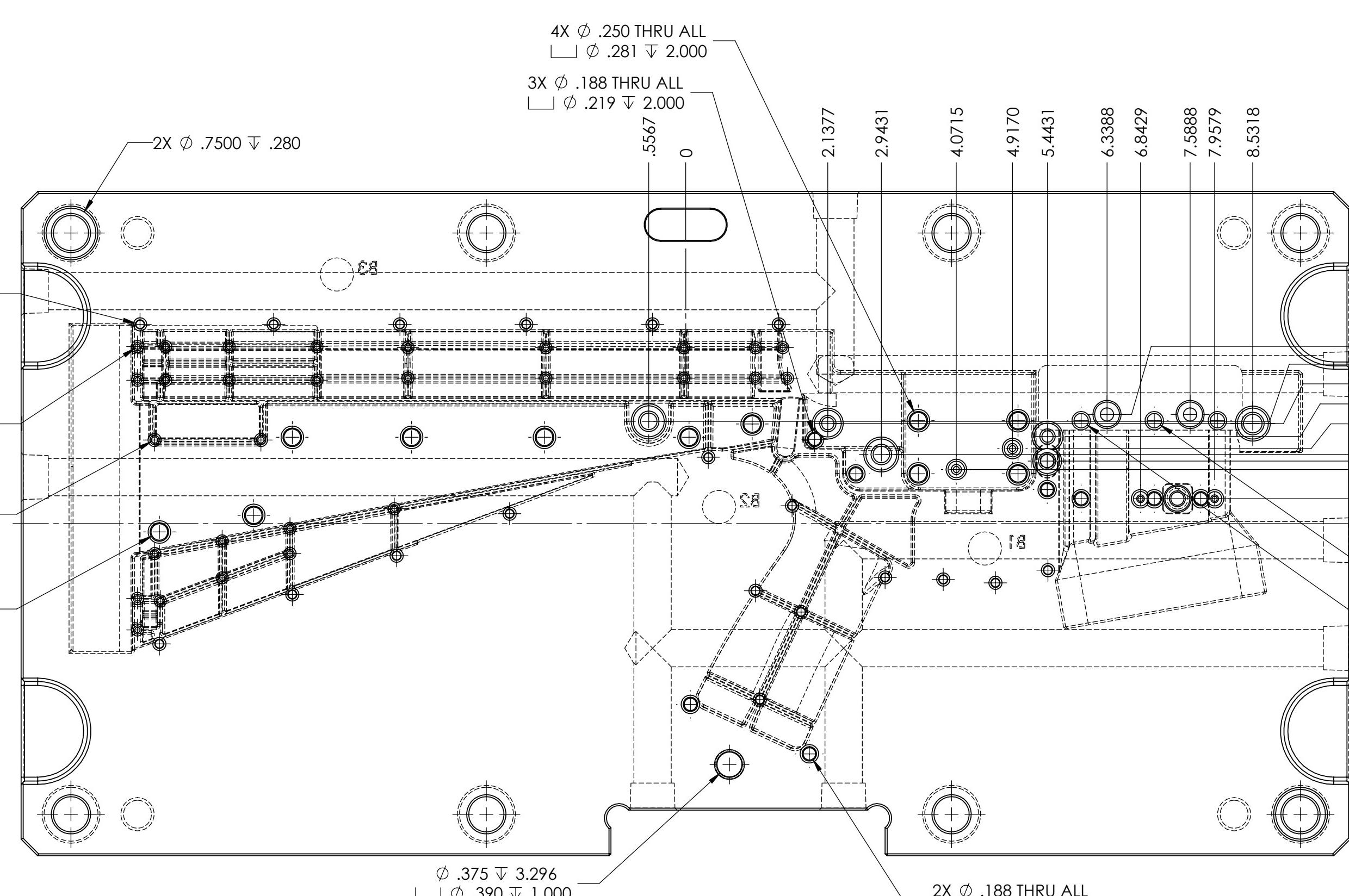
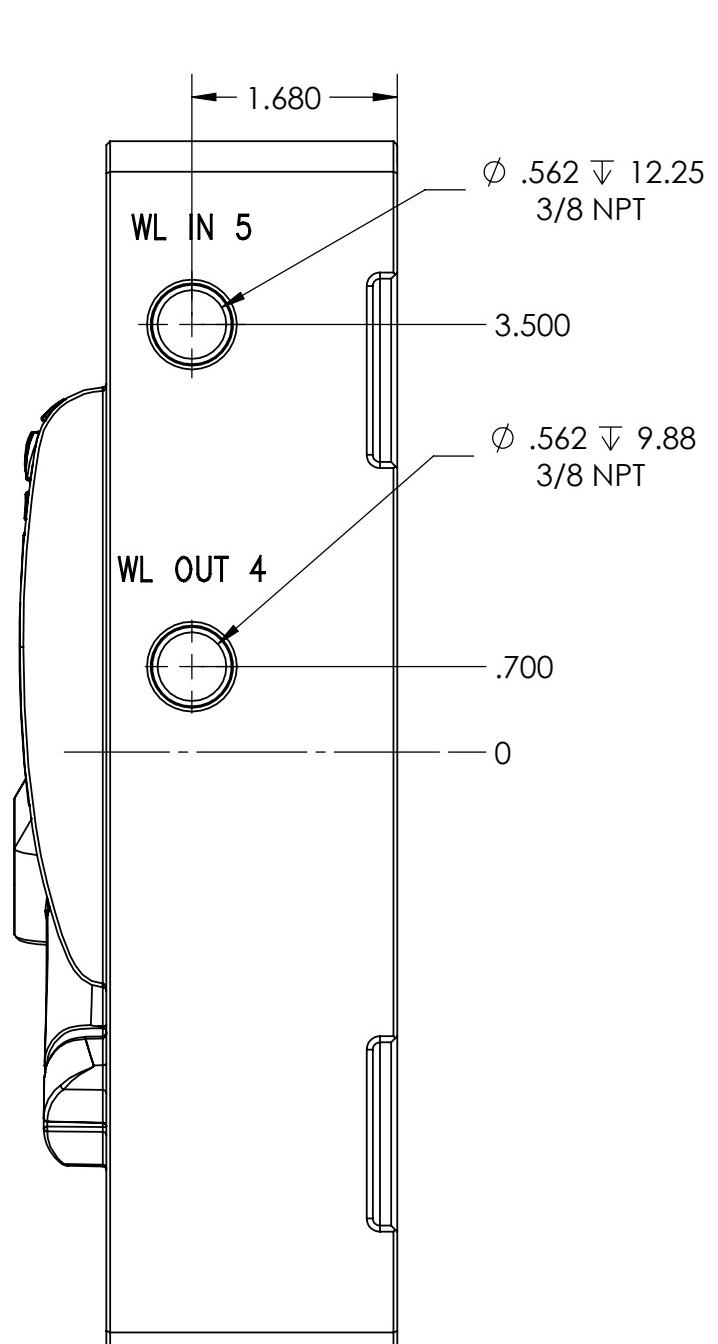
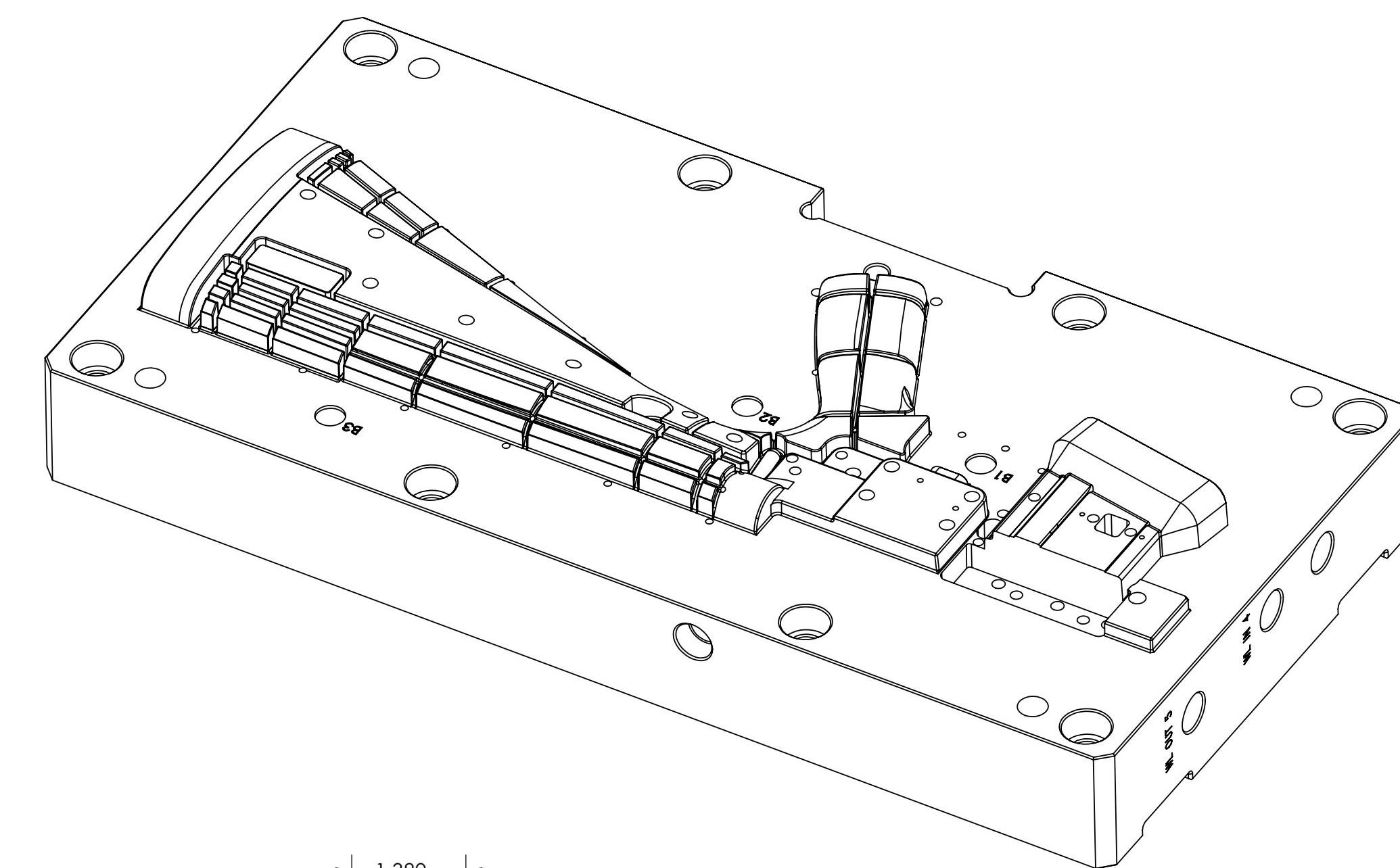
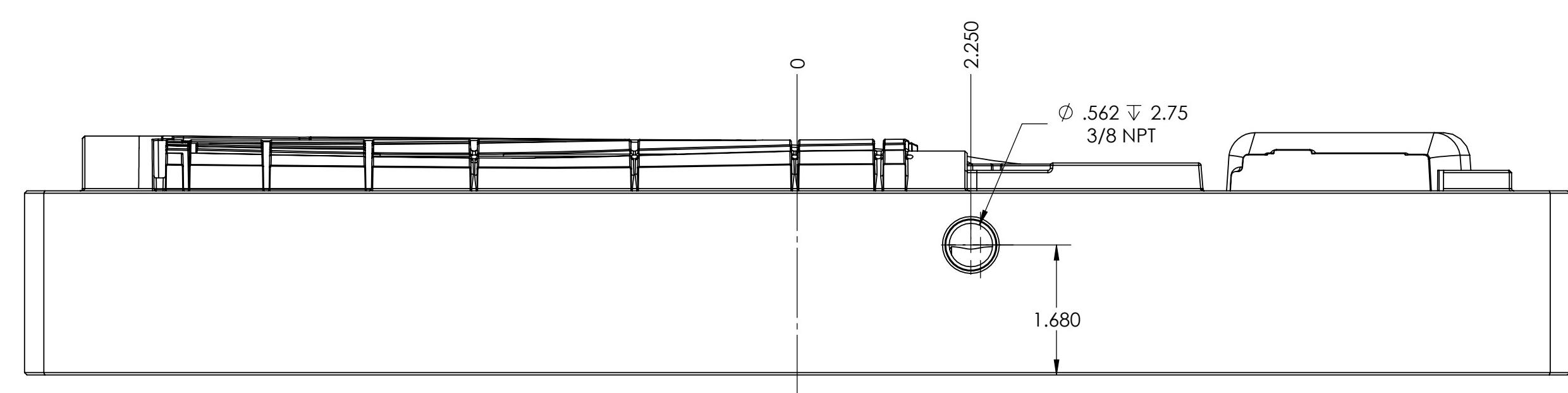
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PART: NOFIN CORE
(2200)
QTY: 1 SPARES: 0
SCALE: 2:3
SIZE: 20.000 X 10.000 X 3.0886
SUPPLIER:
MATERIAL: S7
HARDNESS: 54-56 Rc
FINISH: NONE
PLATING: NONE
FILENAME: NOFIN-2200

**FINAL RELEASE
06/09/21**

**SPERRY
DESIGN SERVICES**
1245 W Gascon Rd San Tan Valley AZ 85143

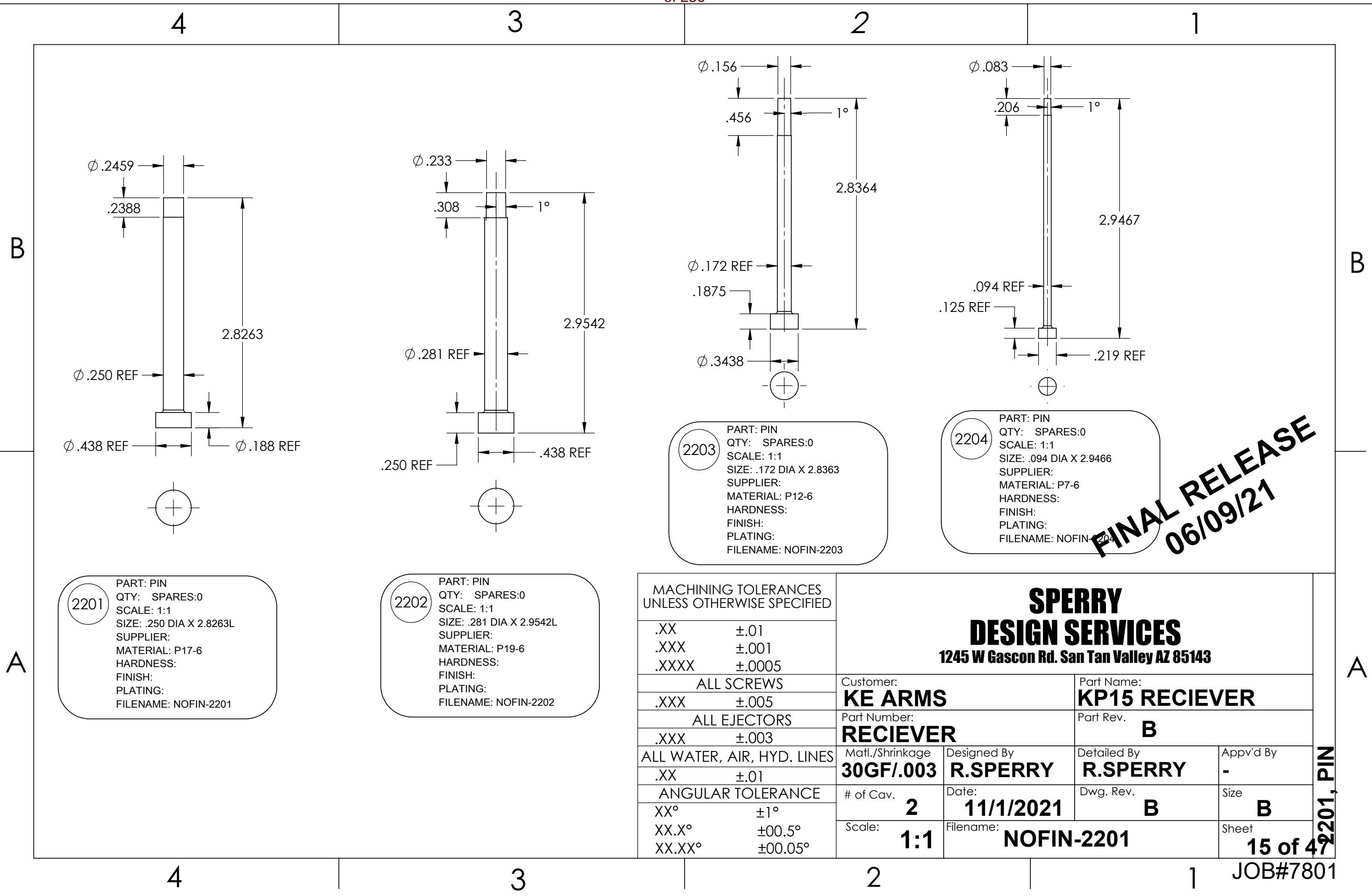
MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	.XX	$\pm .01$	Customer:	A	Part Name:	KP15 RECIEVER
	.XXX	$\pm .001$	Part Number:	RECIEVER	Part Rev.	B
	.XXXX	$\pm .0005$	Matl./Shrinkage	30GF/.003	Designed By	R.SPERRY
ALL SCREWS	.XXX	$\pm .005$	Detailled By	R.SPERRY	App'd By	-
ALL EJECTORS	.XXX	$\pm .002$	Date:	11/1/2021	Dwg. Rev.	B
ALL WATER, AIR, HYD. LINES	.XX	$\pm .01$	# of Cav.	2	Size	D
ANGULAR TOLERANCE	XX°	$\pm 1^\circ$	Scale:	2:3	Filename:	NOFIN-2200
	XX.X°	$\pm 00.5^\circ$				
	XX.XX°	$\pm 00.05^\circ$				

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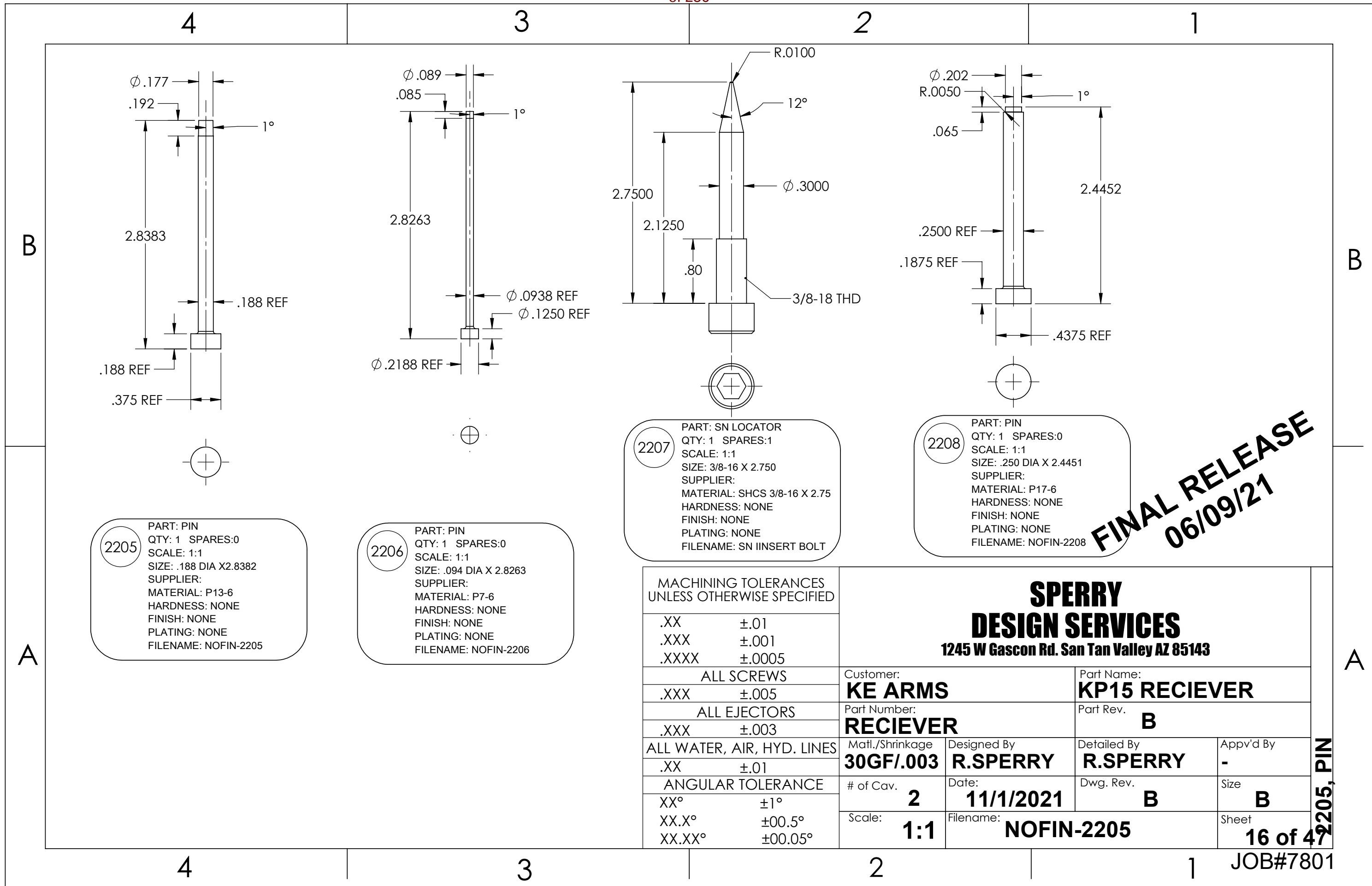
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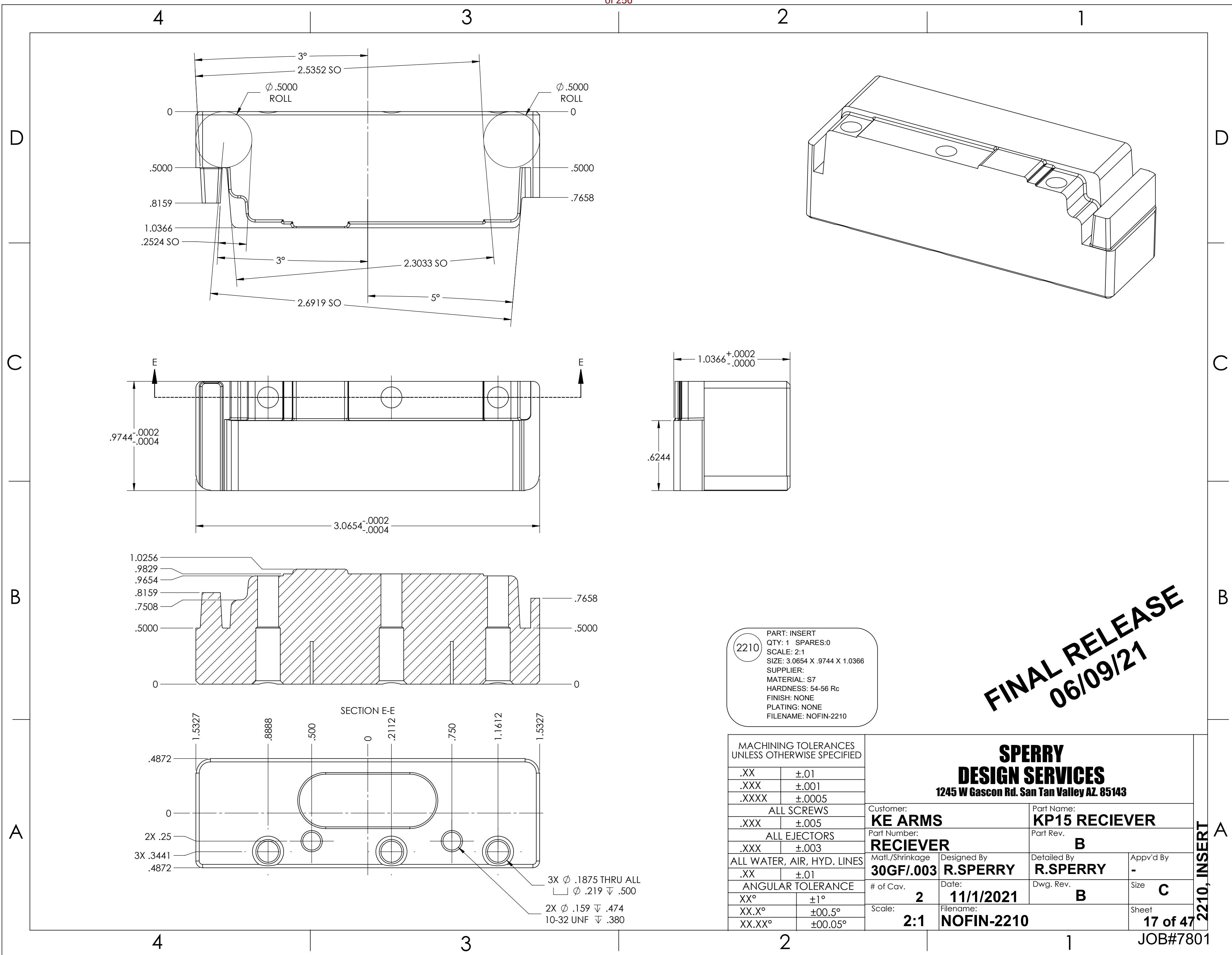
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JOB#7801


 FINAL RELEASE
06/09/21

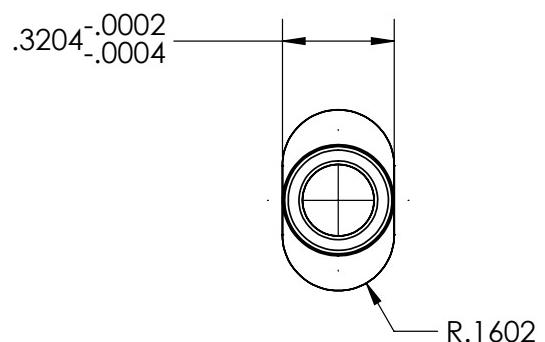


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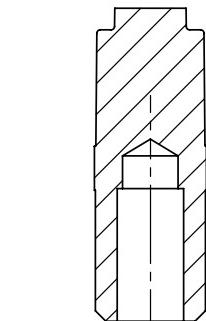
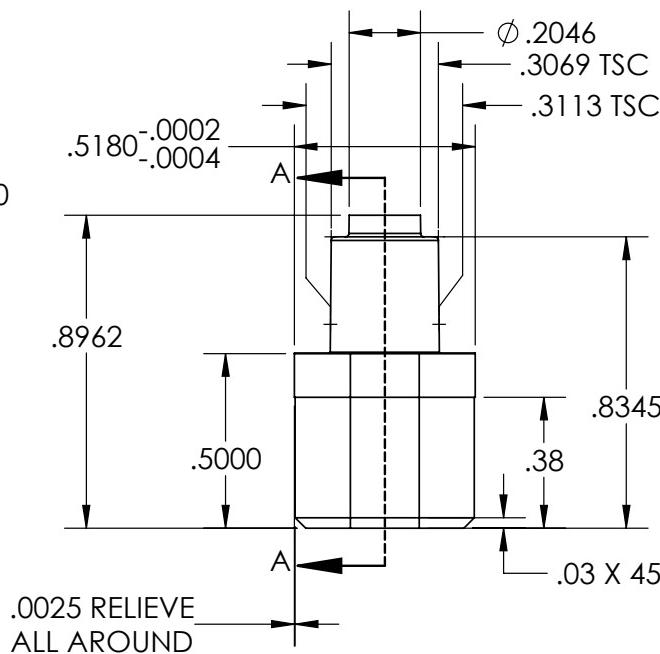
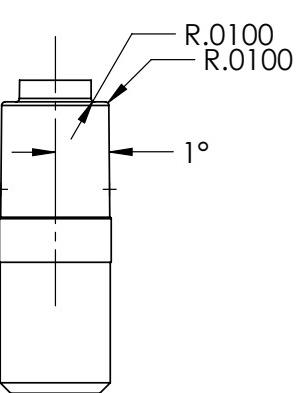
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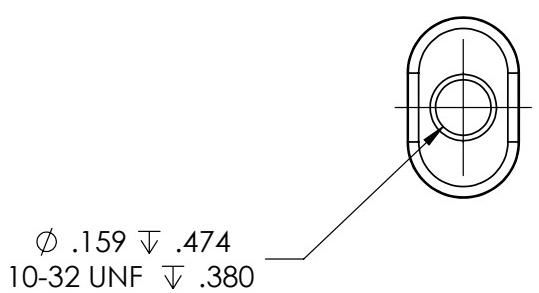
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SECTION A-A



A

2215
PART: INSERT
QTY: 1 SPARES:0
SCALE: 2:1
SIZE: .5180 X .3204 X .8962
SUPPLIER:
MATERIAL: S7
HARDNESS: 54-56 Rc
FINISH: NONE
PLATING: NONE
FILENAME: NOFIN-2215

MACHINING TOLERANCES
UNLESS OTHERWISE SPECIFIED

.XX ±.01
.XXX ±.001
.XXXX ±.0005

ALL SCREWS

.XXX ±.005

ALL EJECTORS

.XXX ±.003

ALL WATER, AIR, HYD. LINES

.XX ±.01

ANGULAR TOLERANCE

XX° ±1°

XX.X° ±00.5°

XX.XX° ±00.05°

**SPERRY
DESIGN SERVICES**
1245 W Gascon Rd. San Tan Valley AZ 85143

Customer:
KE ARMS

Part Name:
KP15 RECEIVER

Part Rev.
B

Part Number:
RECIEVER

Detailed By
R.SPERRY

Appv'd By
-

Matl./Shrinkage
30GF/.003

Designed By
R.SPERRY

Dwg. Rev.
B

Size
B

of Cav.
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Date:
11/1/2021

Sheet
B

Scale:
2:1

Filename:
NOFIN-2215

2215, INSERT
18 of 47

**FINAL RELEASE
06/09/21**

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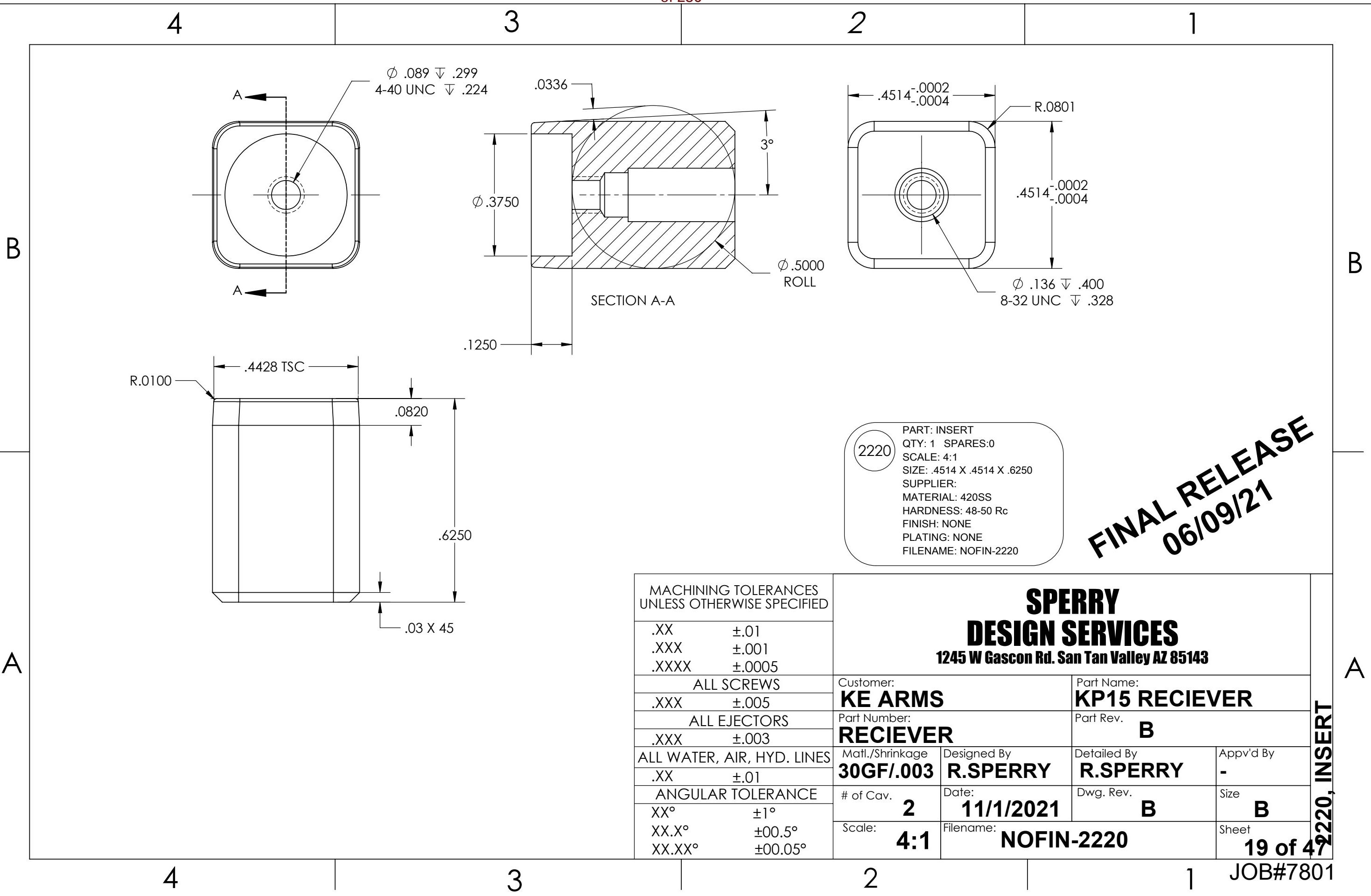
JOB#7801

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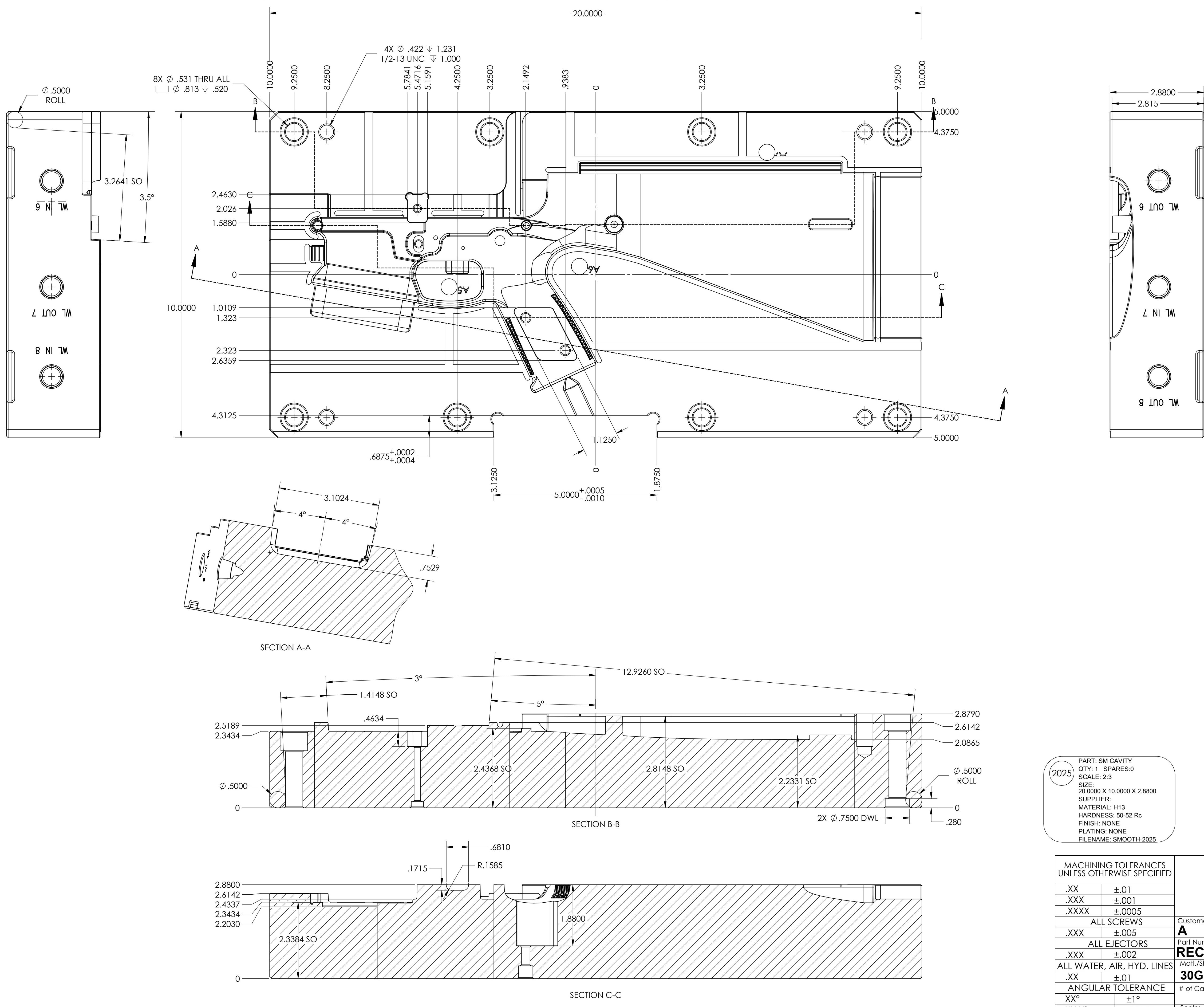
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**FINAL RELEASE
06/09/21**

SPERRY DESIGN SERVICES

45 W Gascon Rd San Tan Valley AZ 85143

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd San Tan Valley AZ. 85143				
.XX	$\pm .01$					
.XXX	$\pm .001$					
.XXXX	$\pm .0005$					
ALL SCREWS		Customer: A		Part Name: KP15 RECEIVER		
.XXX	$\pm .005$	Part Number: RECIEVER		Part Rev. B		
ALL EJECTORS						
.XXX	$\pm .002$					
ALL WATER, AIR, HYD. LINES		Matl./Shrinkage 30GF/.003	Designed By R.SPERRY	Detailed By R.SPERRY	Appv'd By -	
.XX	$\pm .01$	# of Cav. 2	Date: 11/1/2021	Dwg. Rev. B	Size D	
ANGULAR TOLERANCE		Scale: 2:3	Filename: SMOOTH-2025	Sheet 20 of 47		
XX.X°	$\pm 00.5^\circ$					
XX.XX°	$\pm 00.05^\circ$					

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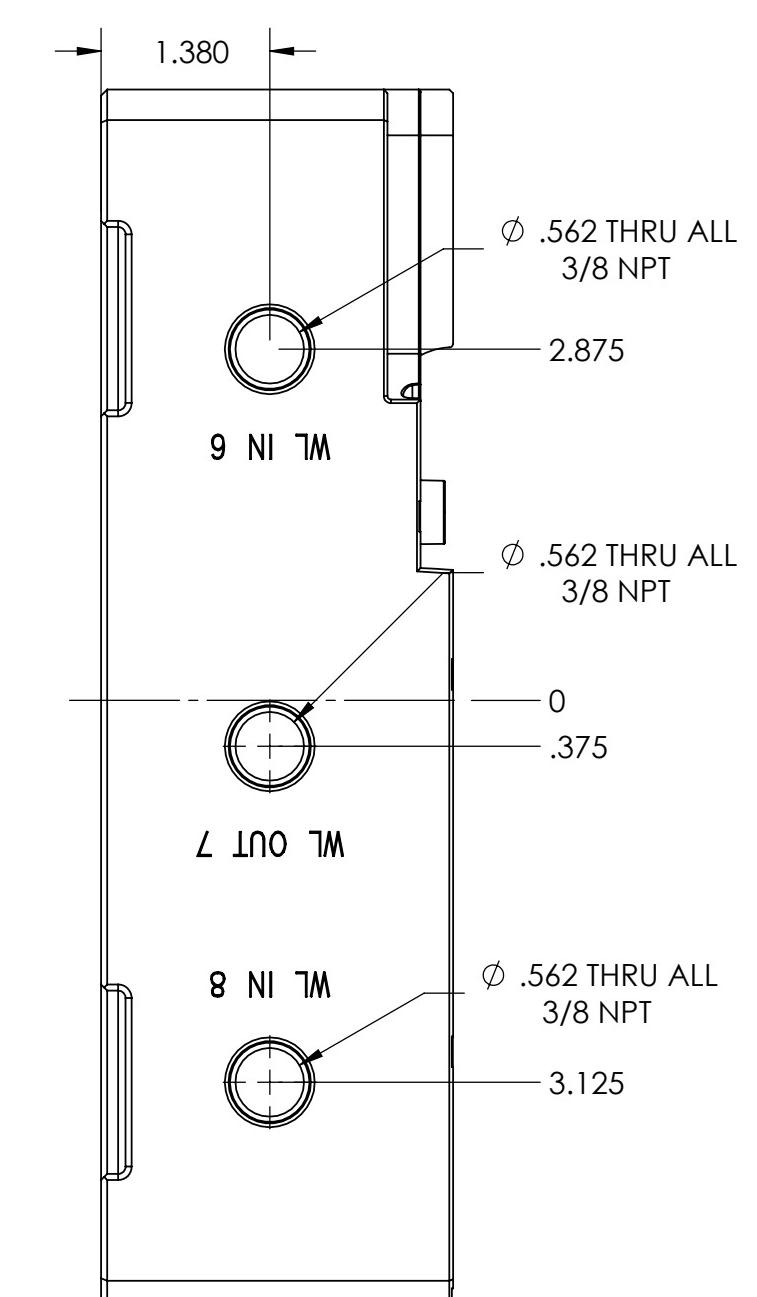
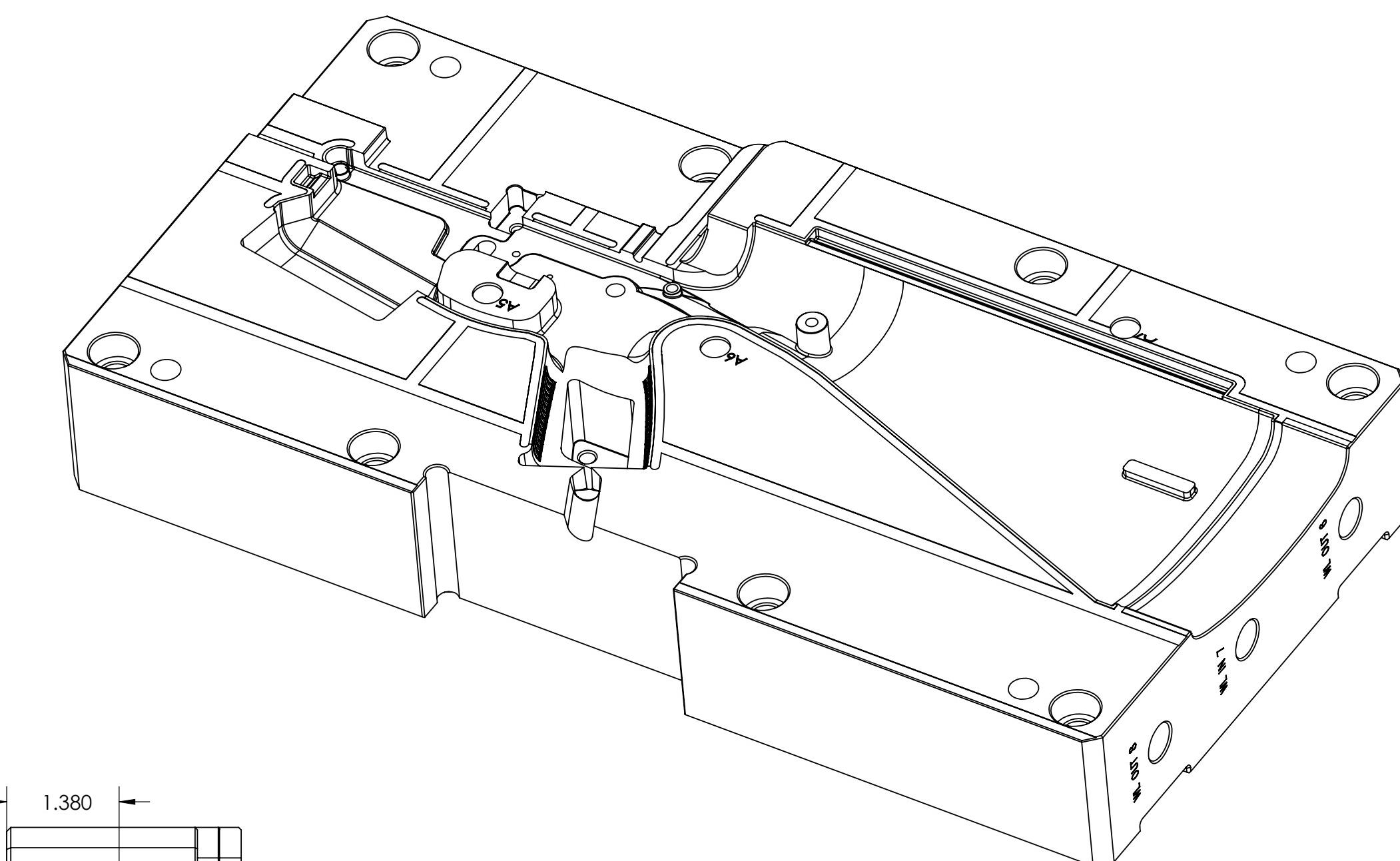
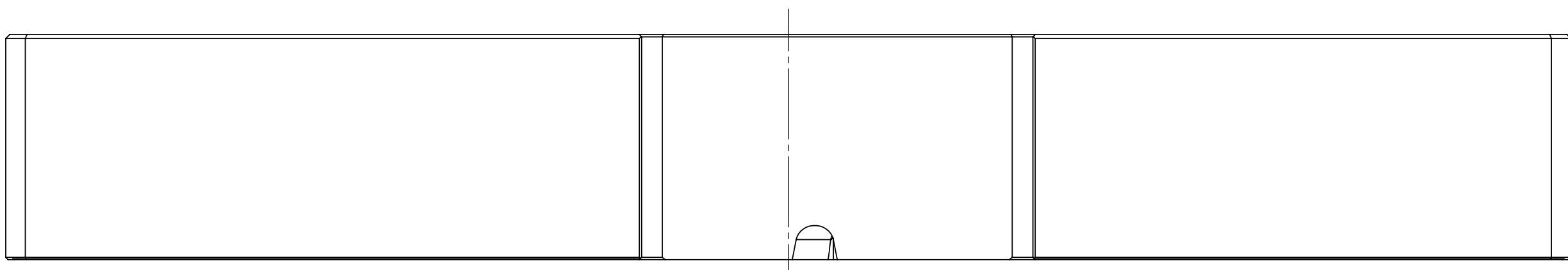
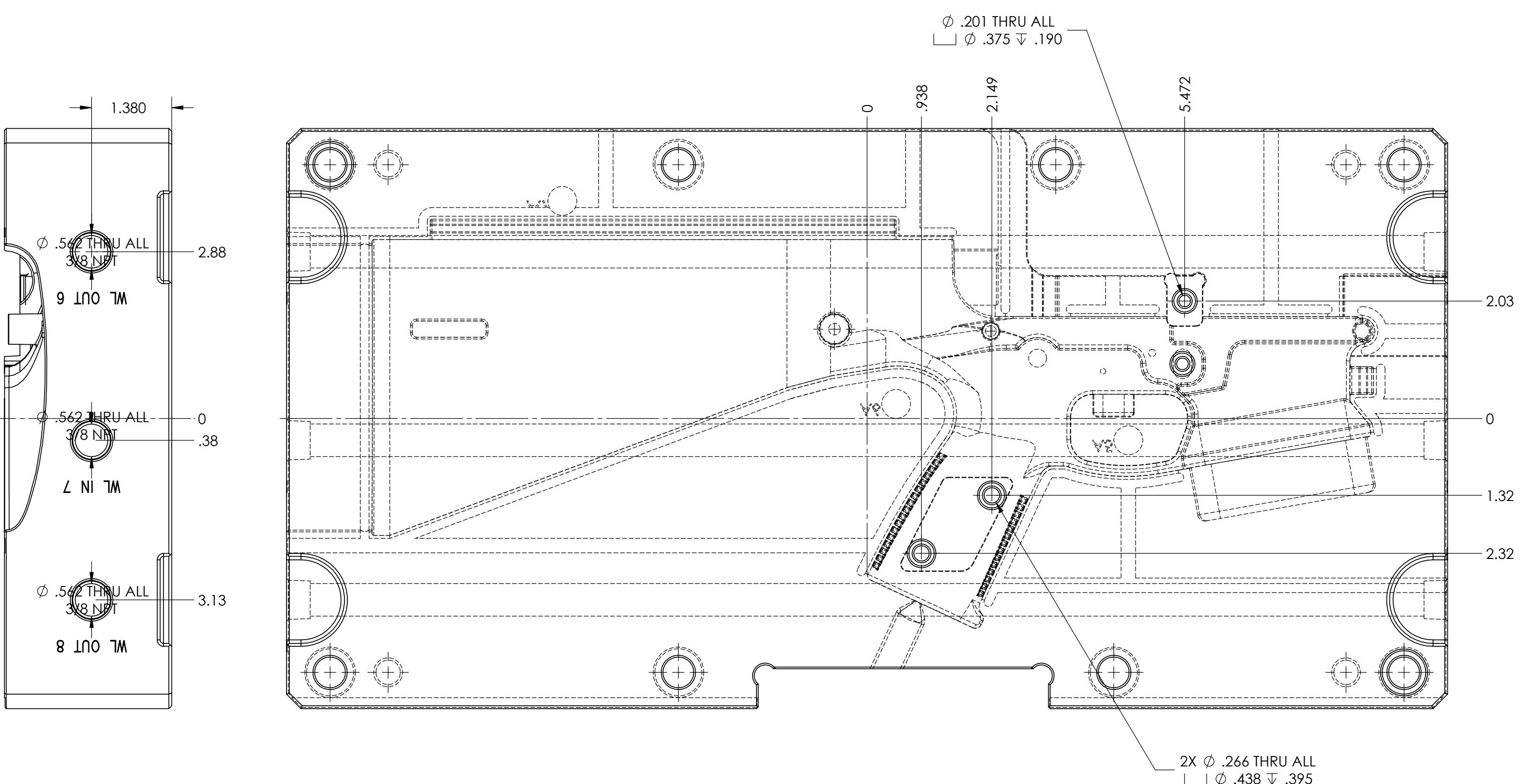
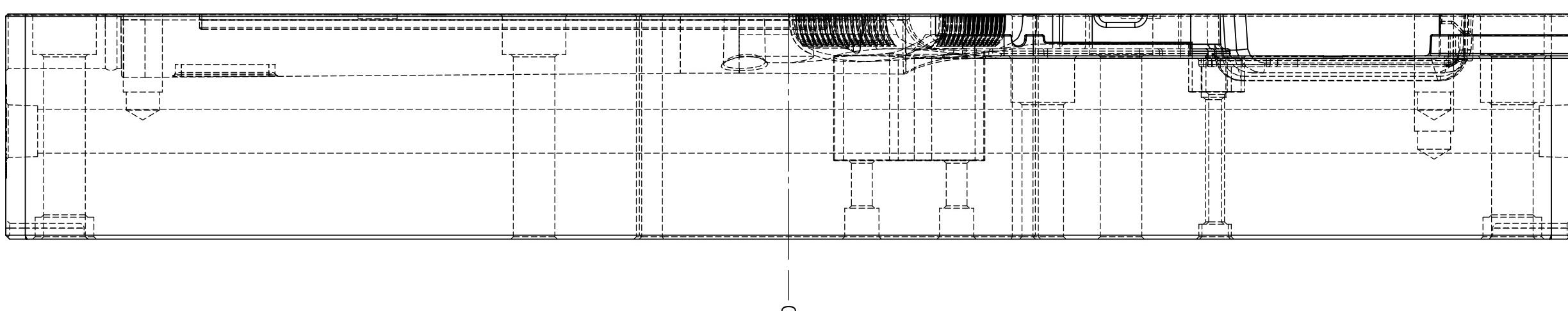
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PART: SM CAVITY
QTY: 1 SPARES:0
SCALE: 2:3
SIZE:
20.0000 X 10.0000 X 2.8800
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH_2025

2025

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd San Tan Valley AZ. 85143				
.XX	$\pm .01$					
.XXX	$\pm .001$					
.XXXX	$\pm .0005$					
ALL SCREWS		Customer: A		Part Name: KP15 RECIEVER		
.XXX	$\pm .005$					
ALL EJECTORS		Part Number: RECIEVER		Part Rev. B		
.XXX $\pm .002$		Matl./Shrinkage 30GF/.003	Designed By R.SPERRY	Detailed By R.SPERRY	Appv'd By -	
ALL WATER, AIR, HYD. LINES						
.XX	$\pm .01$	# of Cav. 2	Date: 11/1/2021	Dwg. Rev. B	Size D	
ANGULAR TOLERANCE						
XX°	$\pm 1°$					
XX.X°	$\pm 00.5°$	Scale: 2:3	Filename: SMOOTH-2025		Sheet 2025, SM CAVITY	
XX.XX°	$\pm 00.05°$					

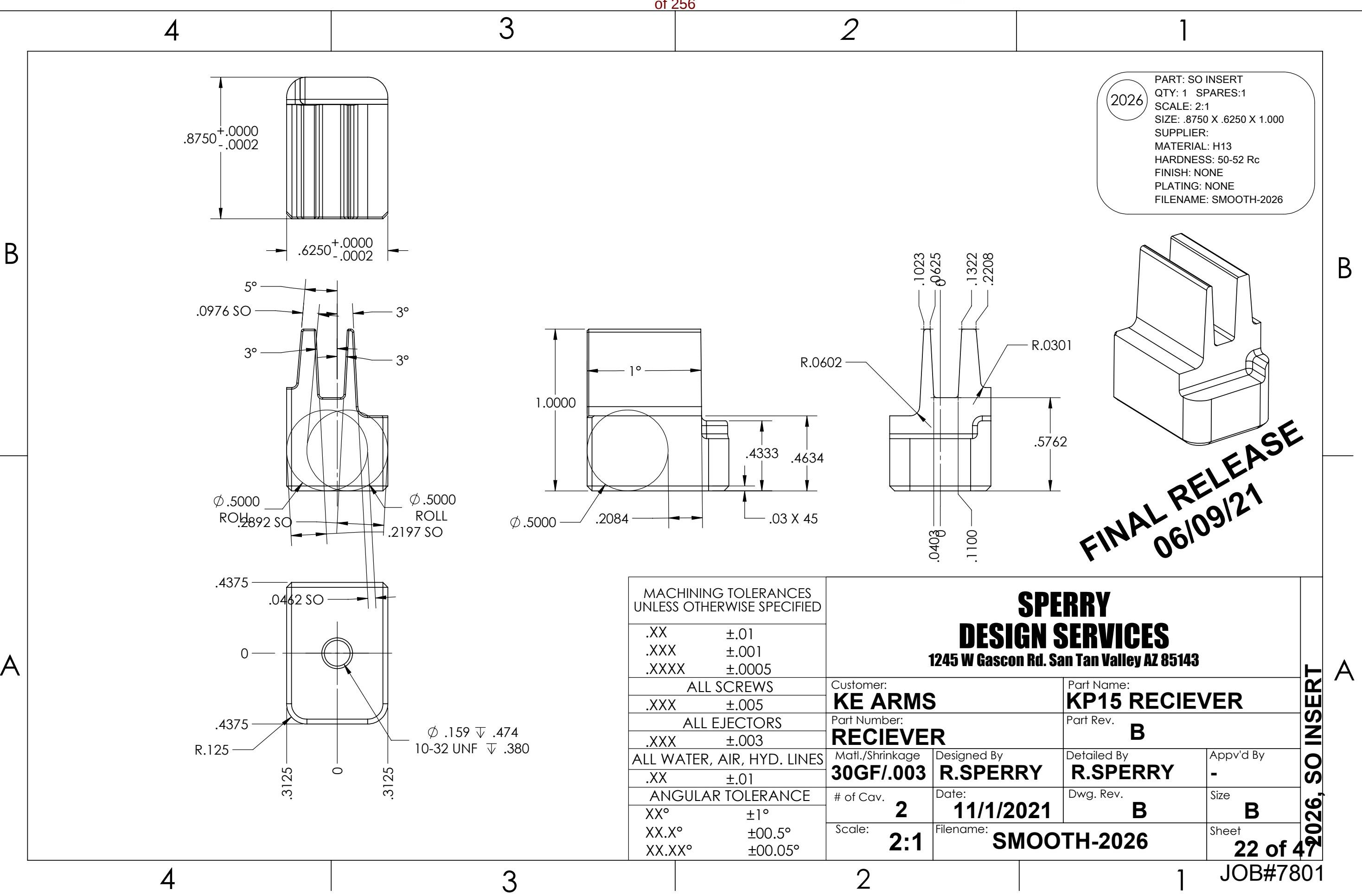
**FINAL RELEASE
06/09/21**

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JOB#7801

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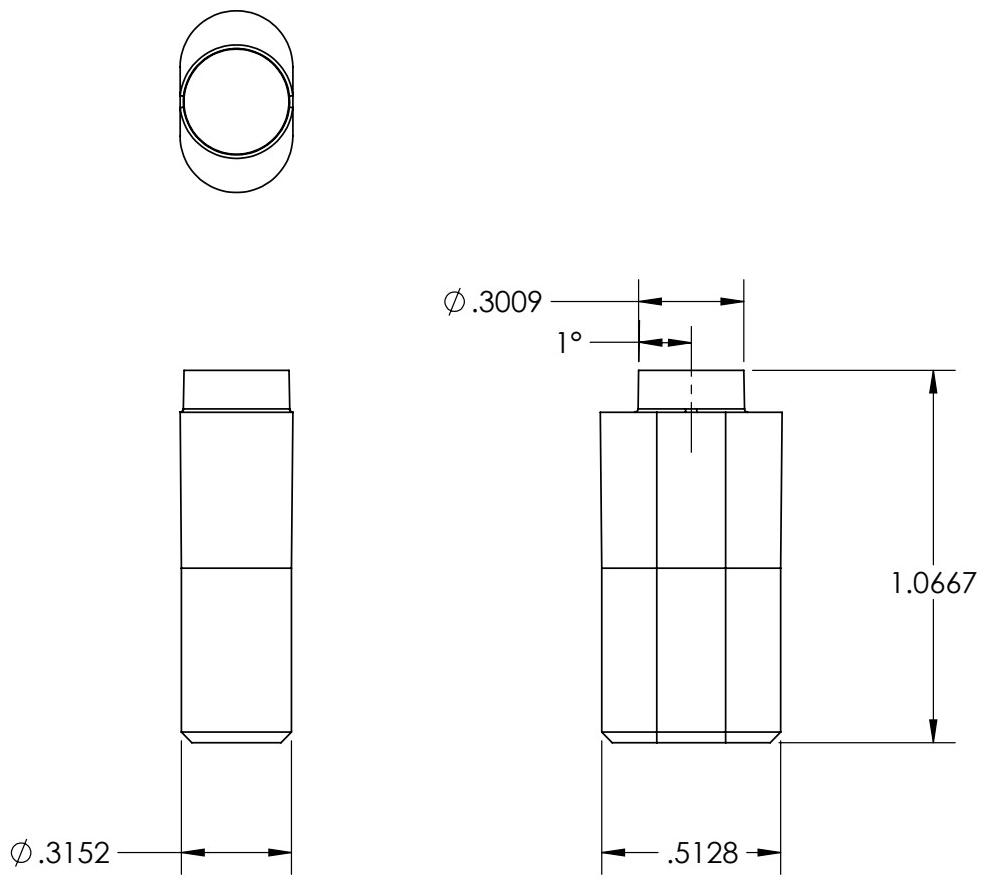
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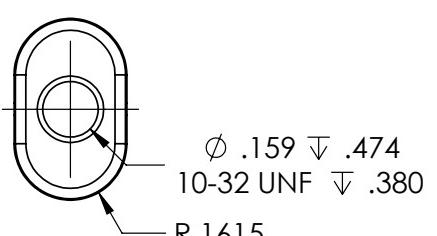


2027
PART: CAVITY INSERT
QTY: 1 SPARES:0
SCALE: 2:1
SIZE: .5128 X .3152 X 1.0667
SUPPLIER:
MATERIAL: S7
HARDNESS: 54-56 Rc
FINISH:
PLATING: NONE
FILENAME: SMOOTH-2027

FINAL RELEASE
06/09/21

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MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	SPERRY DESIGN SERVICES, LLC 1245 W Gascon Rd. San Tan Valley AZ 85143	
.XX ±.01	Customer:	Part Name:
.XXX ±.001	KE ARMS	KP15 RECEIVER
.XXXX ±.0005	Part Number:	Part Rev.
ALL SCREWS	RECIEVER	B
.XXX ±.005	Matl./Shrinkage	Detailed By
ALL EJECTORS	30GF/.003	R.SPERRY
.XXX ±.003	Designed By	Appv'd By
ALL WATER, AIR, HYD. LINES	R.SPERRY	-
.XX ±.01	Date:	Size
ANGULAR TOLERANCE	11/1/2021	B
XX° ±1°	# of Cav.	Dwg. Rev.
XX.X° ±0.5°	2	2
XX.XX° ±0.05°	Scale:	Sheet
	2:1	23 of 47
	Filename: SMOOTH-2027	

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JOB#7801

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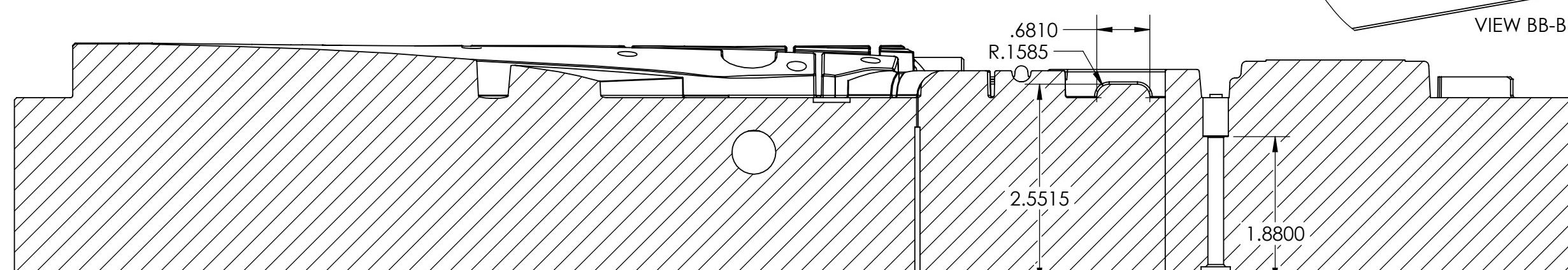
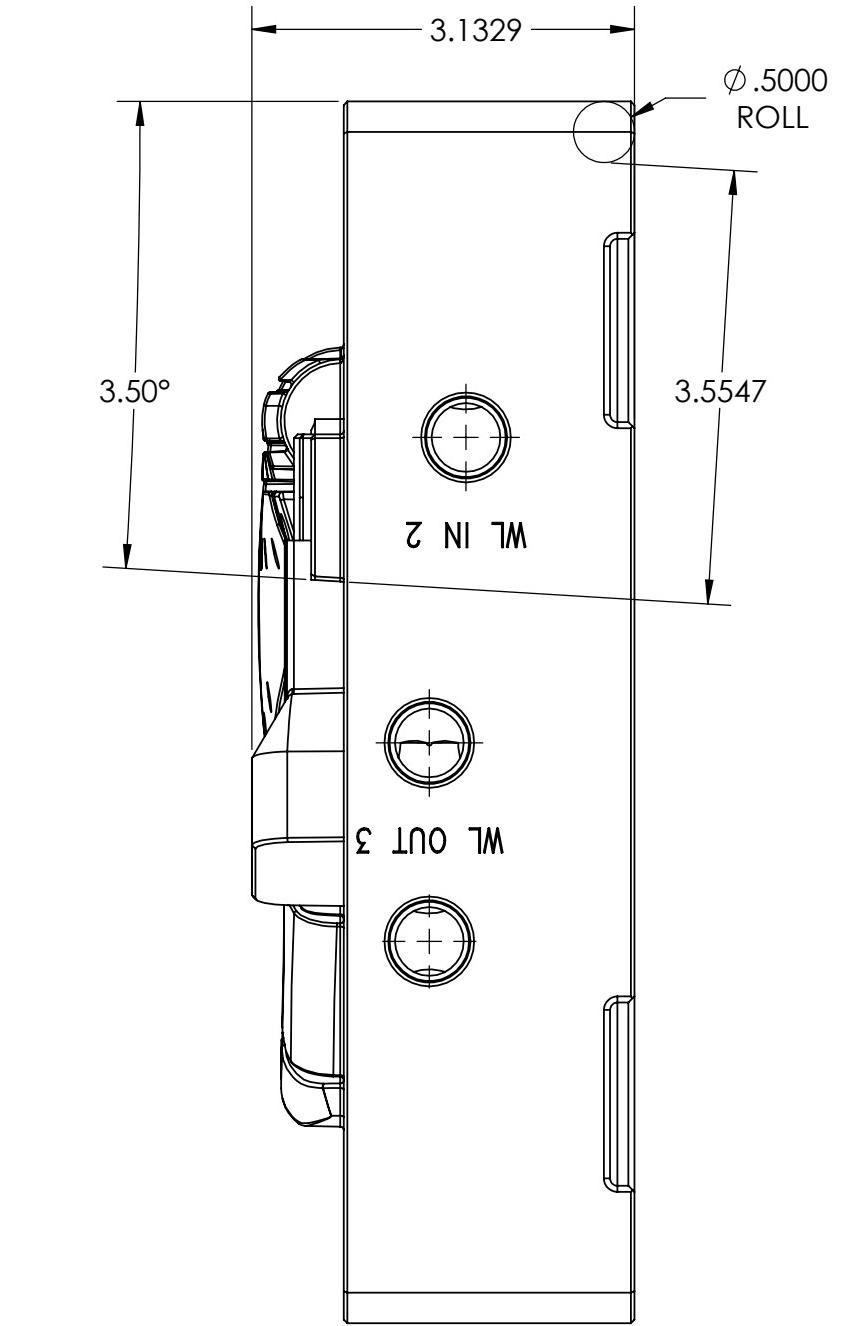
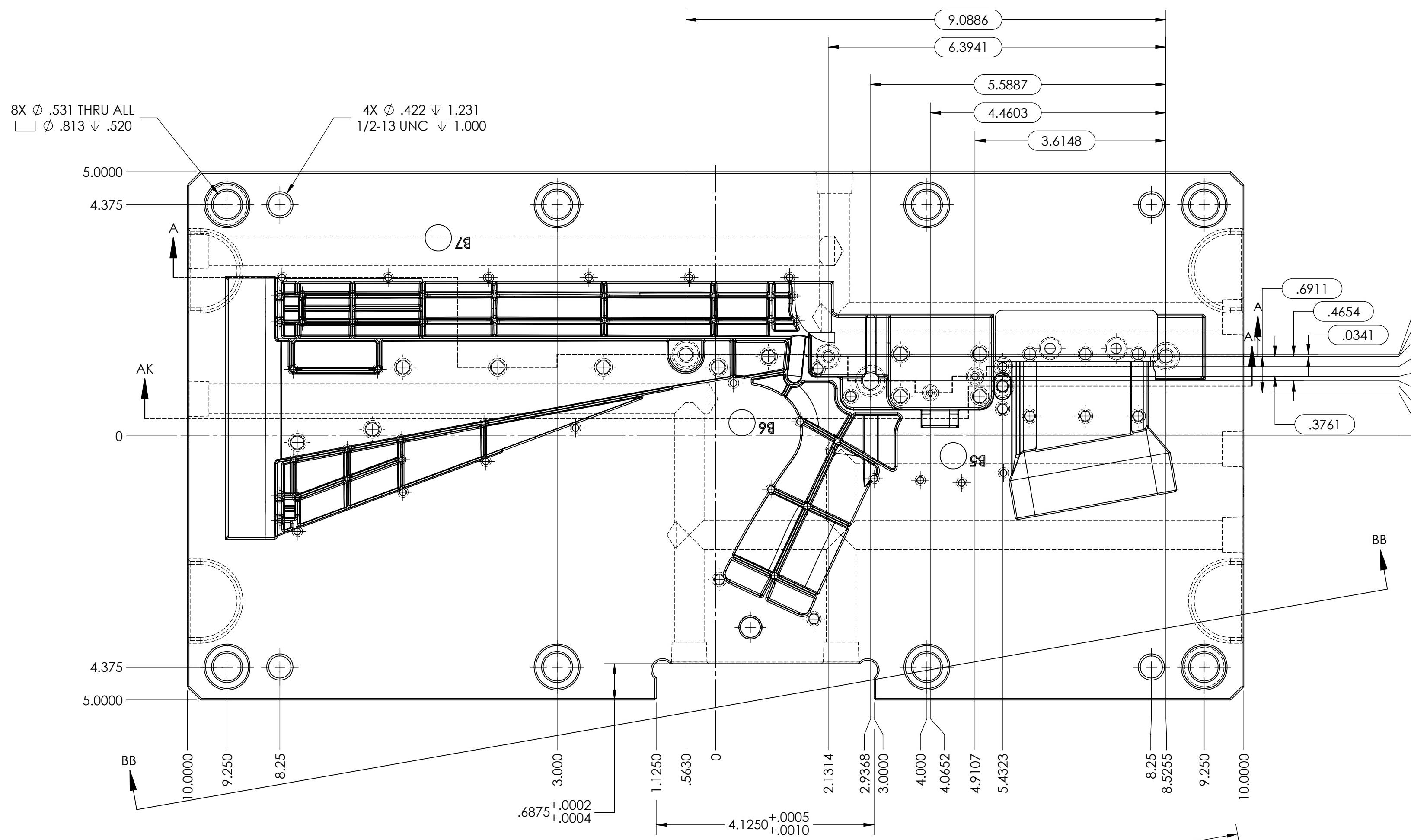
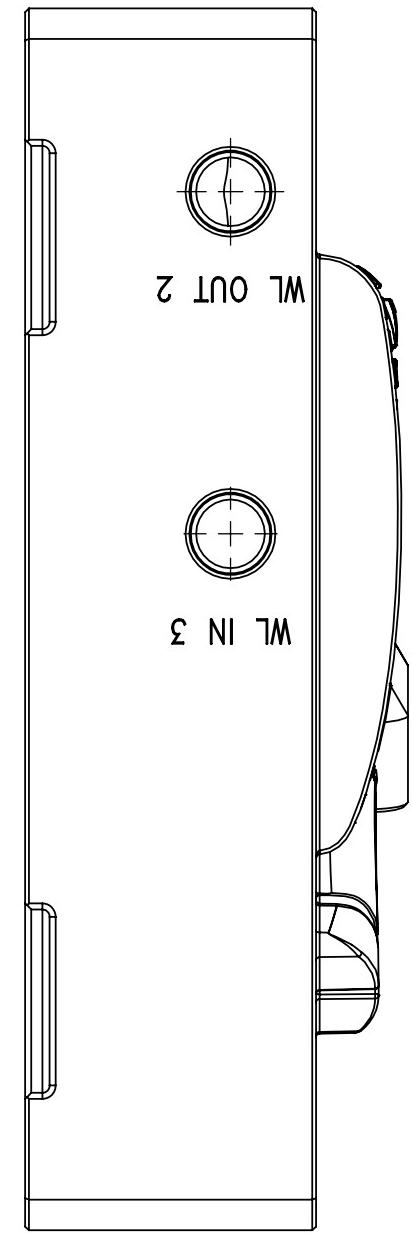
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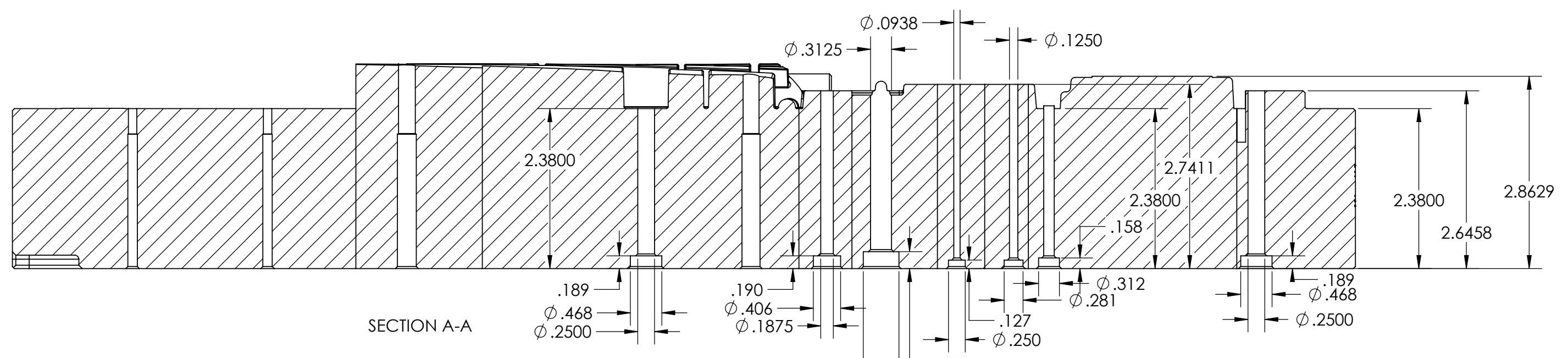
C

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SECTION AK-AK



SECTION A-A

PART: SM CORE
QTY: 1 SPARES: 0
SCALE: 2:3
SIZE: 20.000 X 10.000 X 3.1329
SUPPLIER:
MATERIAL: S7
HARDNESS: 54-56 Rc
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH-2225

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		Customer: A	Part Name: KP15 RECIEVER	Part Rev. B
.XX	±.01			
.XXX	±.001			
.XXXX	±.0005			
ALL SCREWS				
.XXX	±.005			
ALL EJECTORS				
.XXX	±.002			
ALL WATER, AIR, HYD. LINES		Matt./Shrinkage	Designed By	Detailed By
.XX	±.01		30GF/.003 R.SPERRY	R.SPERRY
ANGULAR TOLERANCE		# of Cav.	Date: 11/1/2021	Dwg. Rev. B
XX°	±1°			Size D
XX.X°	±00.5°			App'd By
XX.XX°	±00.05°		Scale: 2:3	Filenam: SMOOTH-2225
				Sheet 24 of 47

FINAL RELEASE
06/09/21

SPERRY
DESIGN SERVICES
1245 W Gascon Rd San Tan Valley AZ 85143

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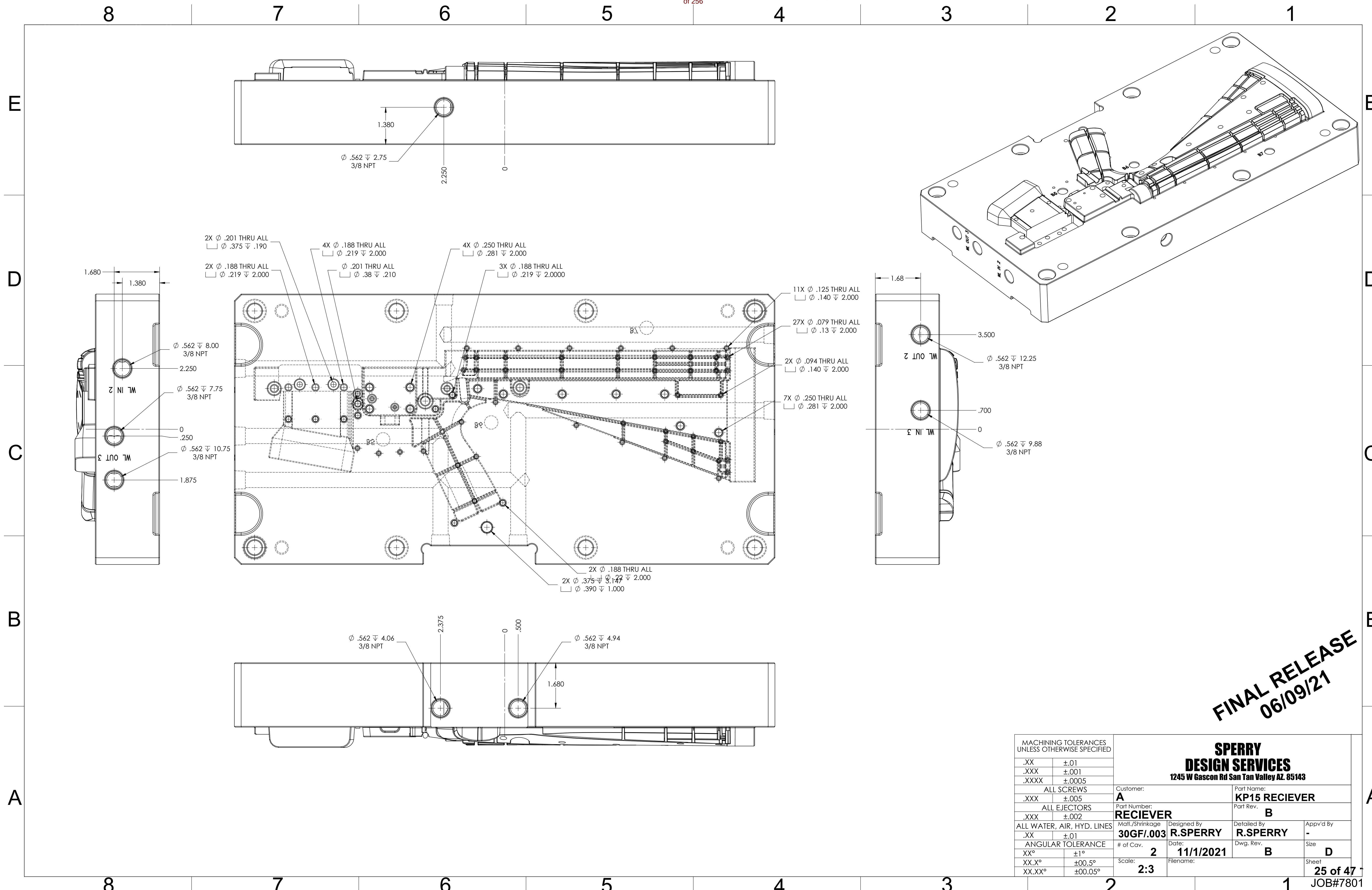
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JOB#7801



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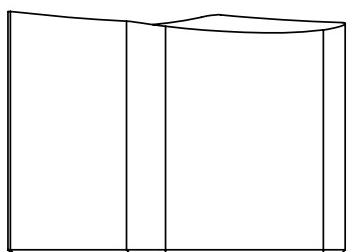
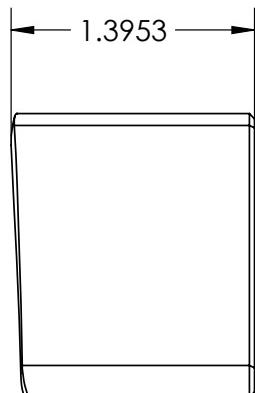
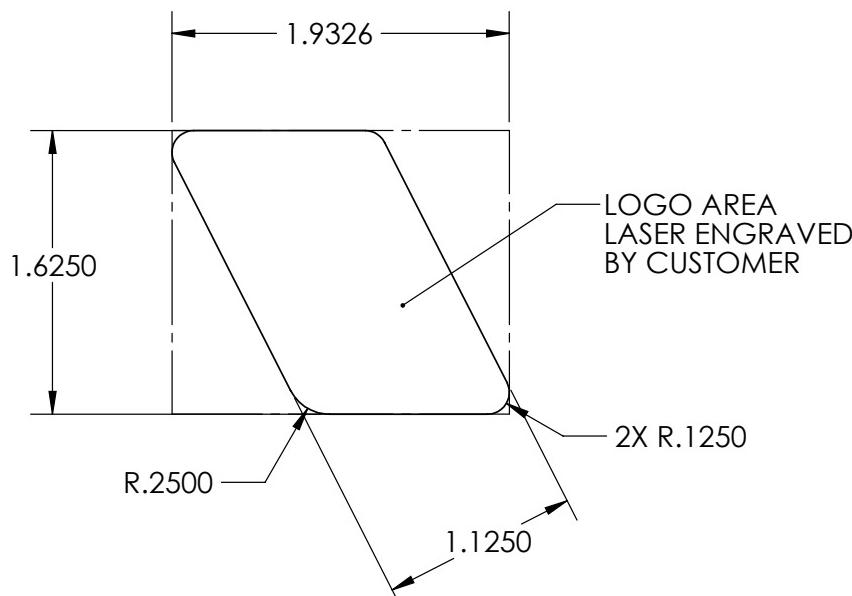
3

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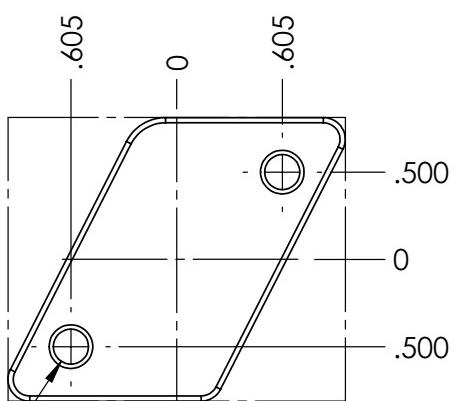


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PART: LOGO INSERT
QTY: 1 SPARES:0
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SIZE: 1.9326 X 1.6250 X 1.3953
SUPPLIER:
MATERIAL: P20
HARDNESS: NONE
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH-2105

FINAL RELEASE
06/09/21

A

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2X Ø .201 ∇ .650
1/4-20 UNC ∇ .500

MACHINING TOLERANCES
UNLESS OTHERWISE SPECIFIED

.XX \pm .01
.XXX \pm .001
.XXXX \pm .0005

ALL SCREWS

.XXX \pm .005

ALL EJECTORS

.XXX \pm .003

ALL WATER, AIR, HYD. LINES

.XX \pm .01

ANGULAR TOLERANCE

XX° \pm 1°

XX.X° \pm 00.5°

XX.XX° \pm 00.05°

**SPERRY
DESIGN SERVICES**
1245 W Gascon Rd. San Tan Valley AZ 85143

Customer:
KE ARMS

Part Name:
KP15 RECEIVER

Part Number:
RECIEVER

Part Rev.
B

Matl./Shrinkage
30GF/.003

Designed By
R.SPERRY

Detailed By
R.SPERRY

Appv'd By
-

of Cav.
2

Date:
11/1/2021

Dwg. Rev.
B

Size
B

Scale:
1:1

Filename:
SMOOTH-2105

Sheet
26 of 47

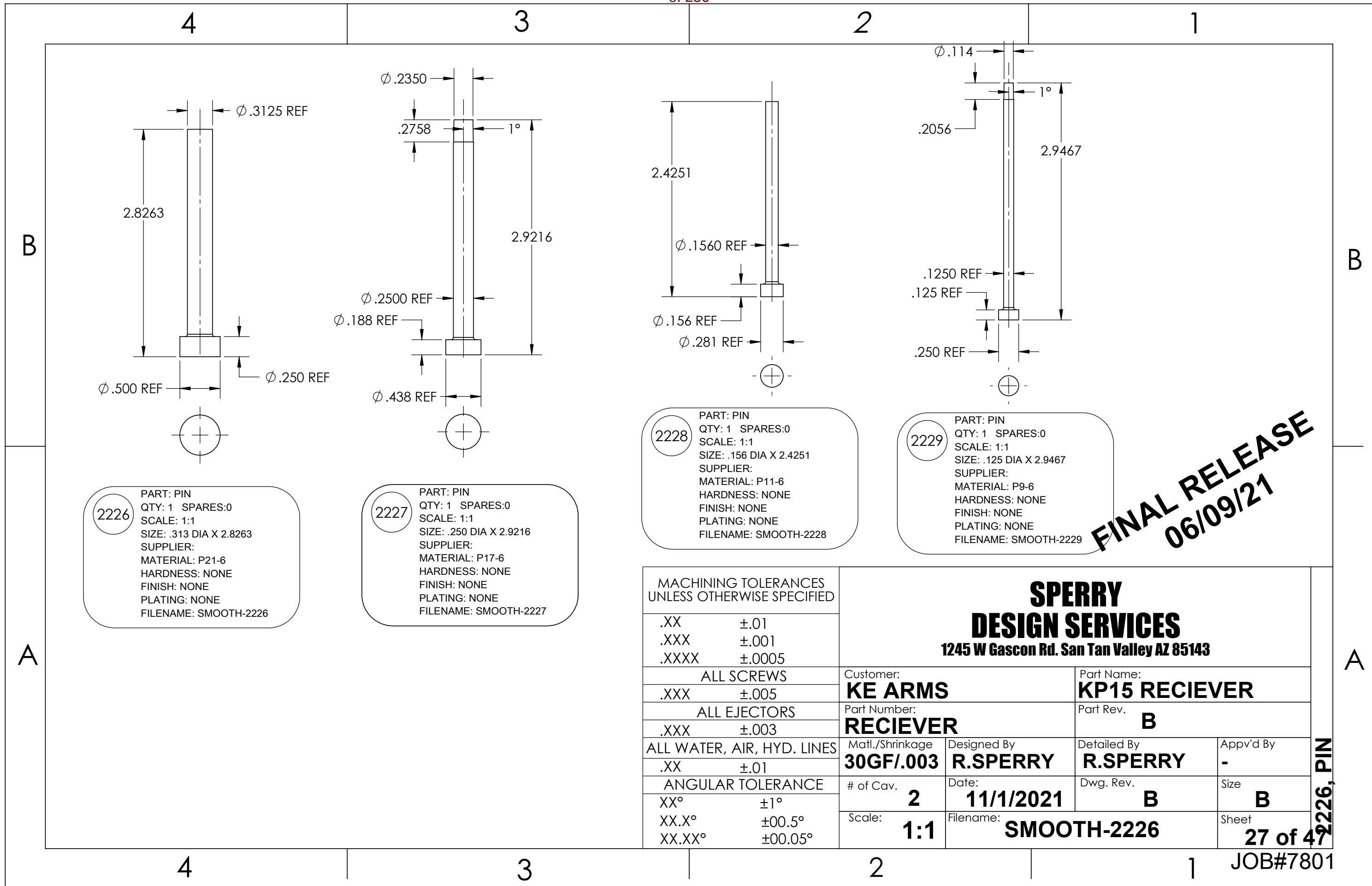
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3

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JOB#7801

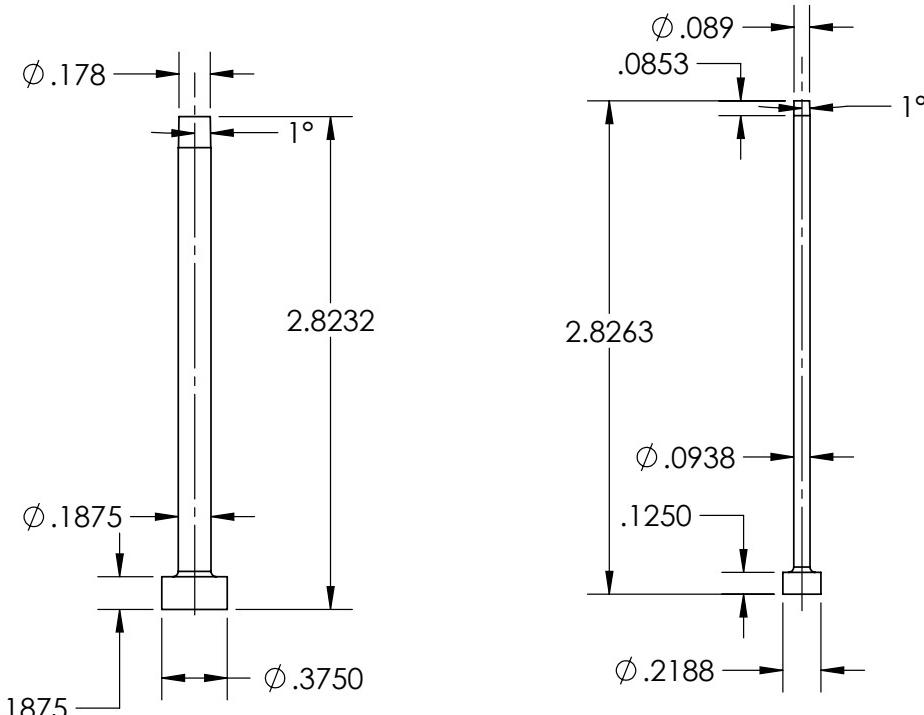


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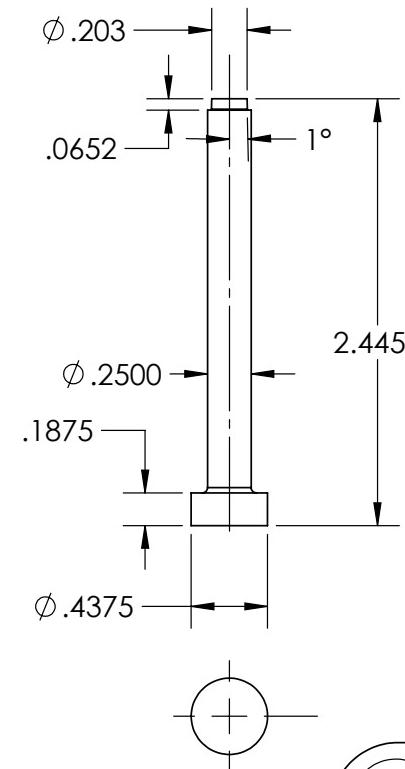
2

1



2230
PART: PIN
QTY: 1 SPARES:0
SCALE: 1:1
SIZE: .187 DIA X 2.8232
SUPPLIER:
MATERIAL: P13-6
HARDNESS: NONE
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH-2230

2231
PART: PIN
QTY: 1 SPARES:0
SCALE: 1:1
SIZE: .094 DIA X 2.8263
SUPPLIER:
MATERIAL: P7-6
HARDNESS: NONE
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH-2231



2232
PART: PIN
QTY: 1 SPARES:0
SCALE: 1:1
SIZE: .250 X 2.4452
SUPPLIER:
MATERIAL: P17-6
HARDNESS: NONE
FINISH: NONE
PLATING: EN CHROME
FILENAME: SMOOTH-2232

MACHINING TOLERANCES
UNLESS OTHERWISE SPECIFIED

.XX $\pm .01$
.XXX $\pm .001$
.XXXX $\pm .0005$

ALL SCREWS

.XXX $\pm .005$

ALL EJECTORS

.XXX $\pm .003$

ALL WATER, AIR, HYD. LINES

.XX $\pm .01$

ANGULAR TOLERANCE

XX° $\pm 1^\circ$

XX.X° $\pm 0.5^\circ$

XX.XX° $\pm 0.05^\circ$

**SPERRY
DESIGN SERVICES**
1245 W Gascon Rd. San Tan Valley AZ 85143

Customer: **KE ARMS** Part Name: **KP15 RECEIVER**

Part Number: **RECIEVER** Part Rev. **B**

Matl./Shrinkage **30GF/.003** Designed By **R.SPERRY** Detailed By **R.SPERRY** Appv'd By **-**

Date: **11/1/2021** Dwg. Rev. **B** Size **B**

Scale: **1:1** Filename: **SMOOTH-2230** Sheet **28 of 47**

2230, PIN

4

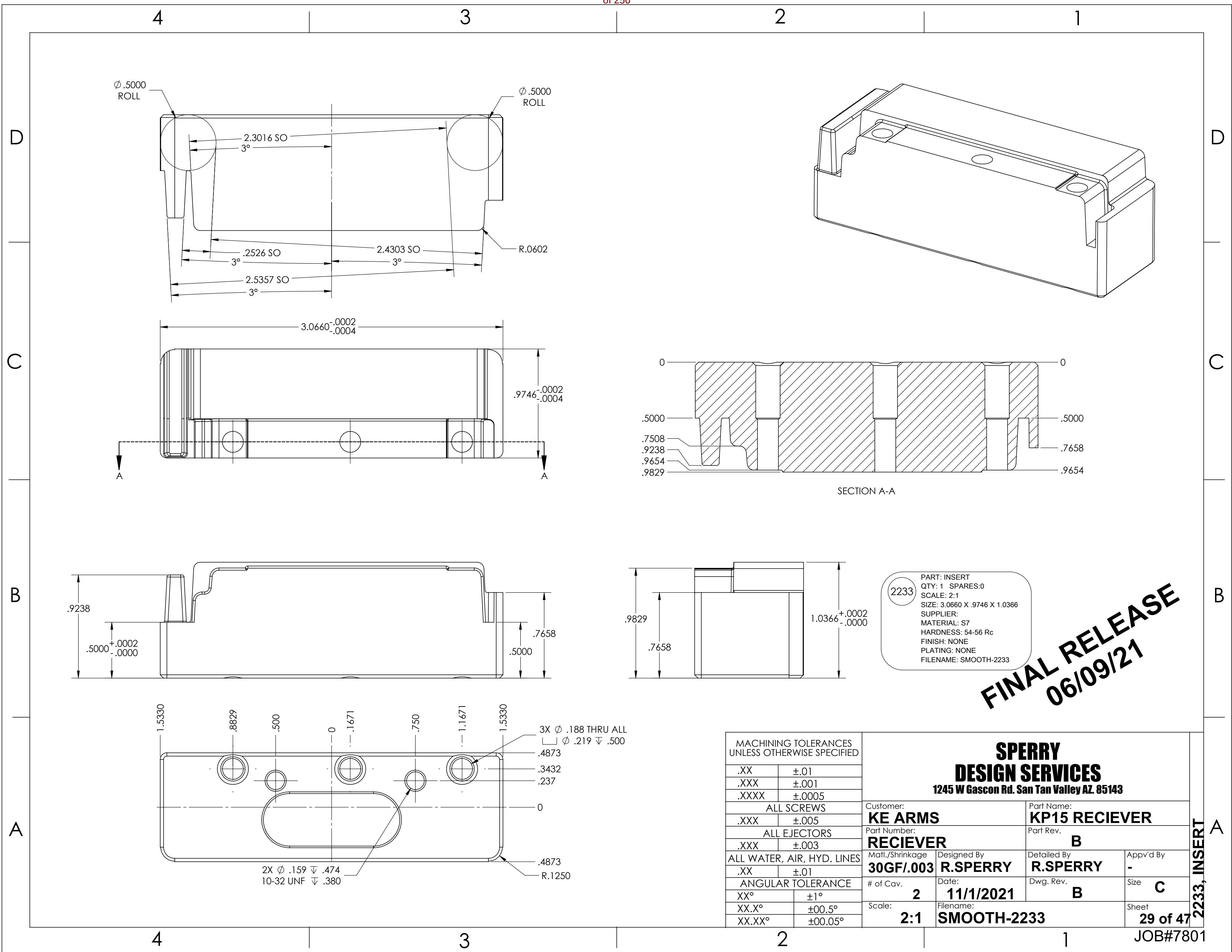
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JOB#7801

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06/09/21**

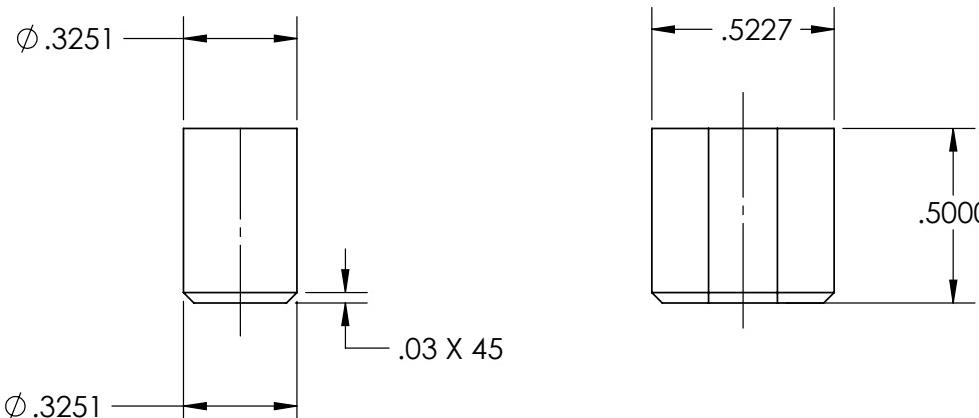


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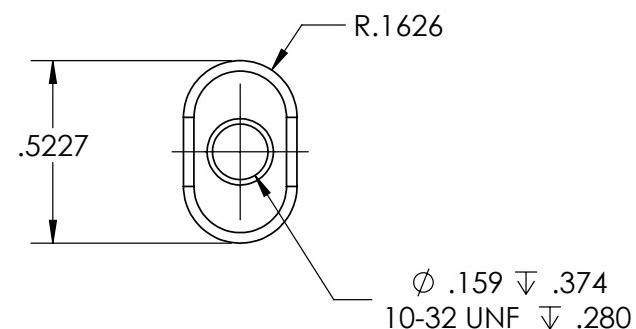
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2235
PART: INSERT
QTY: 1 SPARES:0
SCALE: 2:1
SIZE: .5227 X .3251 X .5000
SUPPLIER:
MATERIAL: S7
HARDNESS: 54-56 Rc
FINISH: NONE
PLATING: NONE
FILENAME: SMOOTH-2235



MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd. San Tan Valley AZ 85143	
.XX	±.01	Customer:	KE ARMS
.XXX	±.001	Part Name:	KP15 RECEIVER
.XXXX	±.0005	Part Rev.	B
ALL SCREWS		Part Number:	
.XXX	±.005	RECIEVER	
ALL EJECTORS		Matl./Shrinkage	
.XXX	±.003	30GF/.003	Designed By
ALL WATER, AIR, HYD. LINES		R.SPERRY	Detailed By
.XX	±.01		R.SPERRY
ANGULAR TOLERANCE		# of Cav.	Date:
XX°	±1°	2	11/1/2021
XX.X°	±00.5°	Scale:	Filename:
XX.XX°	±00.05°	2:1	SMOOTH-2235
Sheet		30 of 47	
2235, INSERT			

FINAL RELEASE
06/09/21

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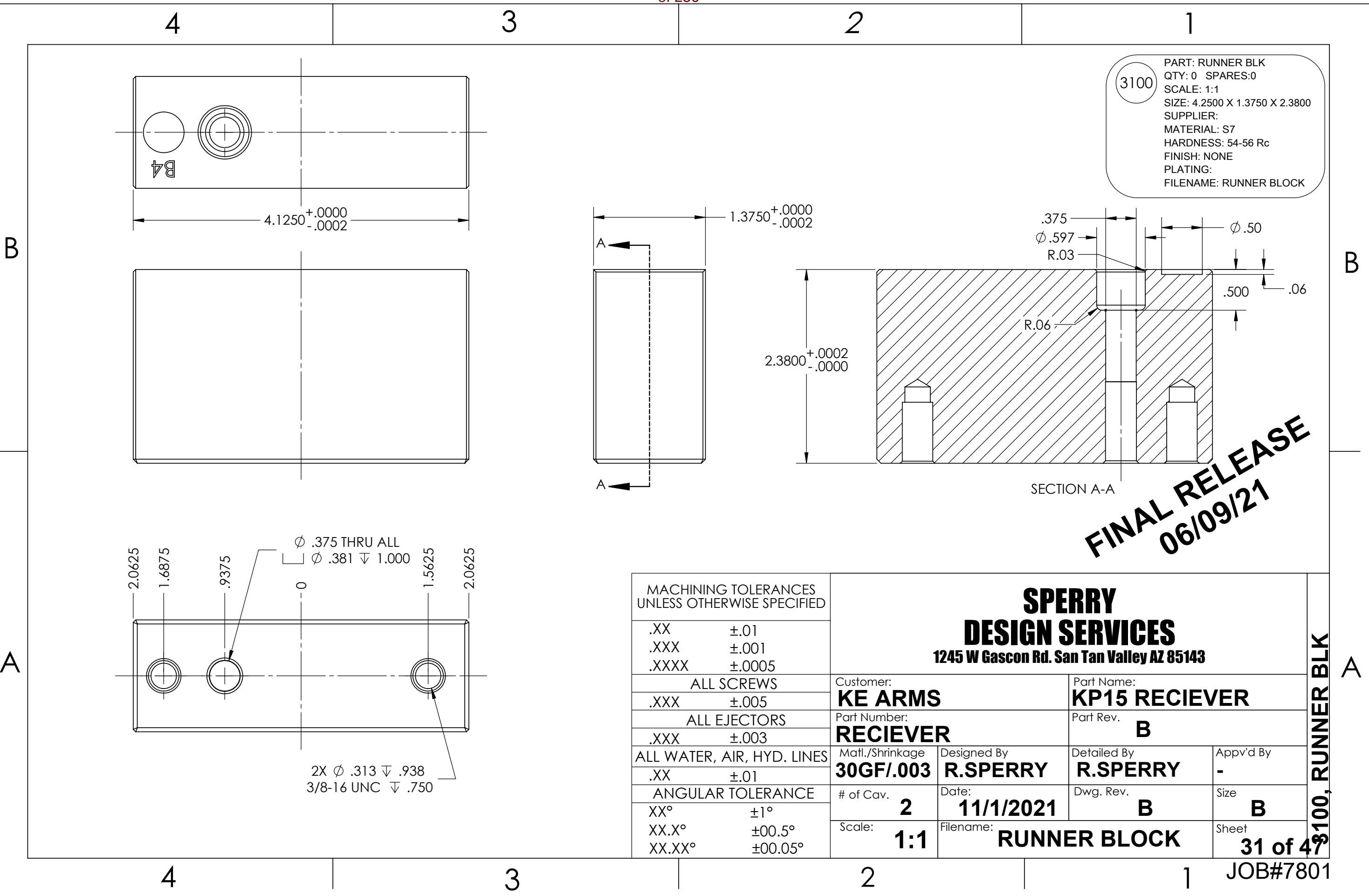
JOB#7801

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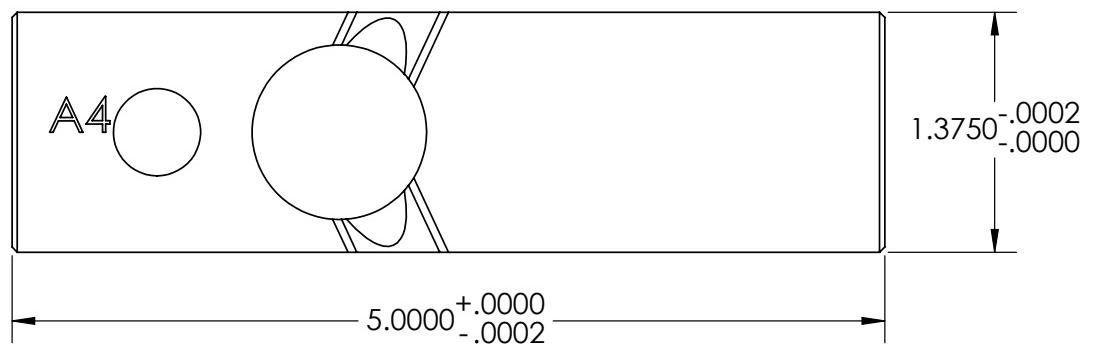


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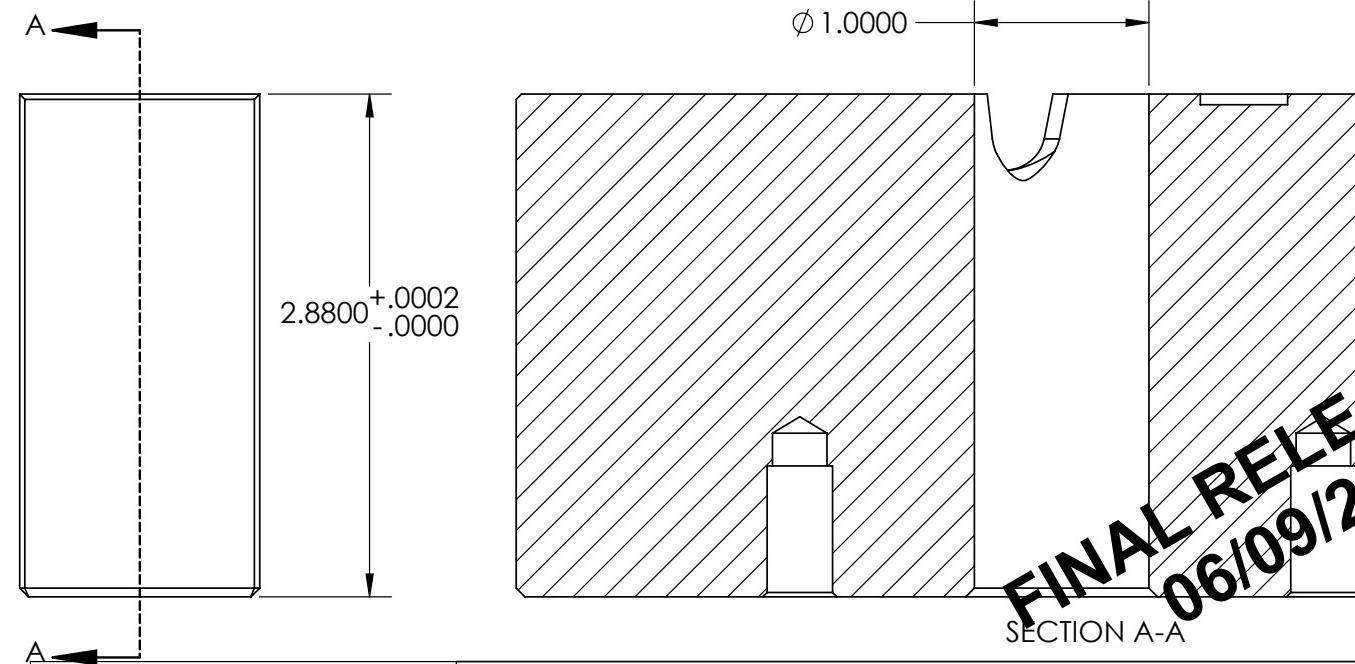
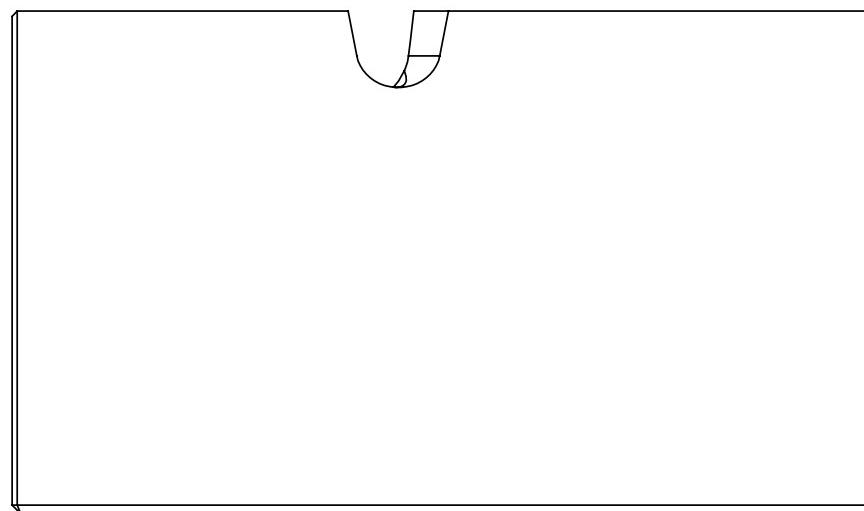
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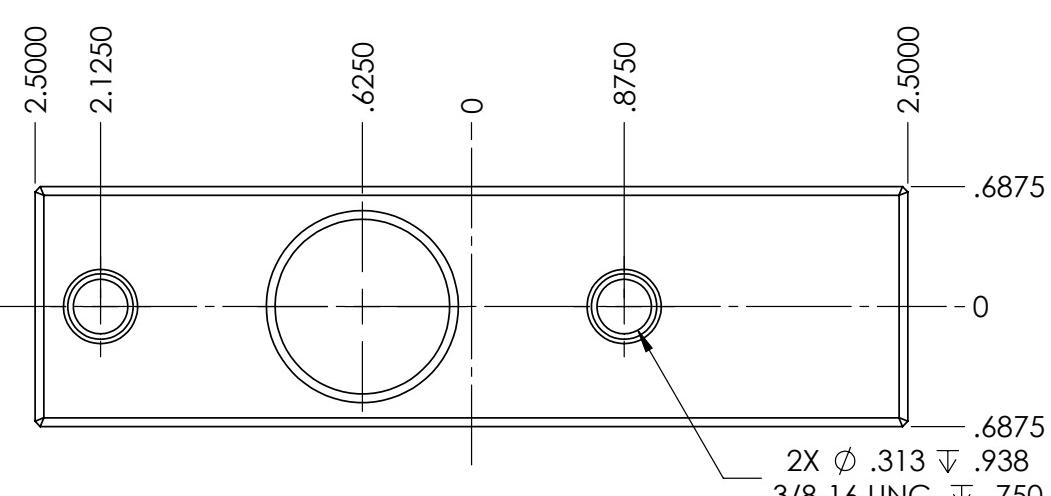
PART: SPRUE BLOCK
QTY: 1 SPARES:0
SCALE: 1:1
SIZE: 5.0000 X 1.3750 X 2.8800
SUPPLIER:
MATERIAL: H13
HARDNESS: 50-52 Rc
FINISH: NONE
PLATING: NONE
FILENAME: SPRUE BLOCK



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06/09/21

SPERRY

DESIGN SERVICES
1245 W Gascon Rd. San Tan Valley AZ 85143



MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	Customer: KE ARMS		Part Name: KP15 RECEIVER
.XX ±.01	Part Number: RECIEVER		Part Rev. B
.XXX ±.001	Matl./Shrinkage 30GF/.003		Detailed By R.SPERRY
.XXXX ±.0005	Designed By R.SPERRY		Appv'd By -
ALL SCREWS	Customer: KE ARMS		
.XXX ±.005	Part Number: RECIEVER		
ALL EJECTORS	Part Rev. B		
.XXX ±.003	Detailed By R.SPERRY		
ALL WATER, AIR, HYD. LINES	Appv'd By -		
.XX ±.01	Size B		
ANGULAR TOLERANCE	# of Cav. 2	Date: 11/1/2021	Dwg. Rev. B
XX° ±1°	Scale: 1:1	Filename: SPRUCE BLOCK	Sheet 32 of 47
XX.X° ±00.5°			
XX.XX° ±00.05°			

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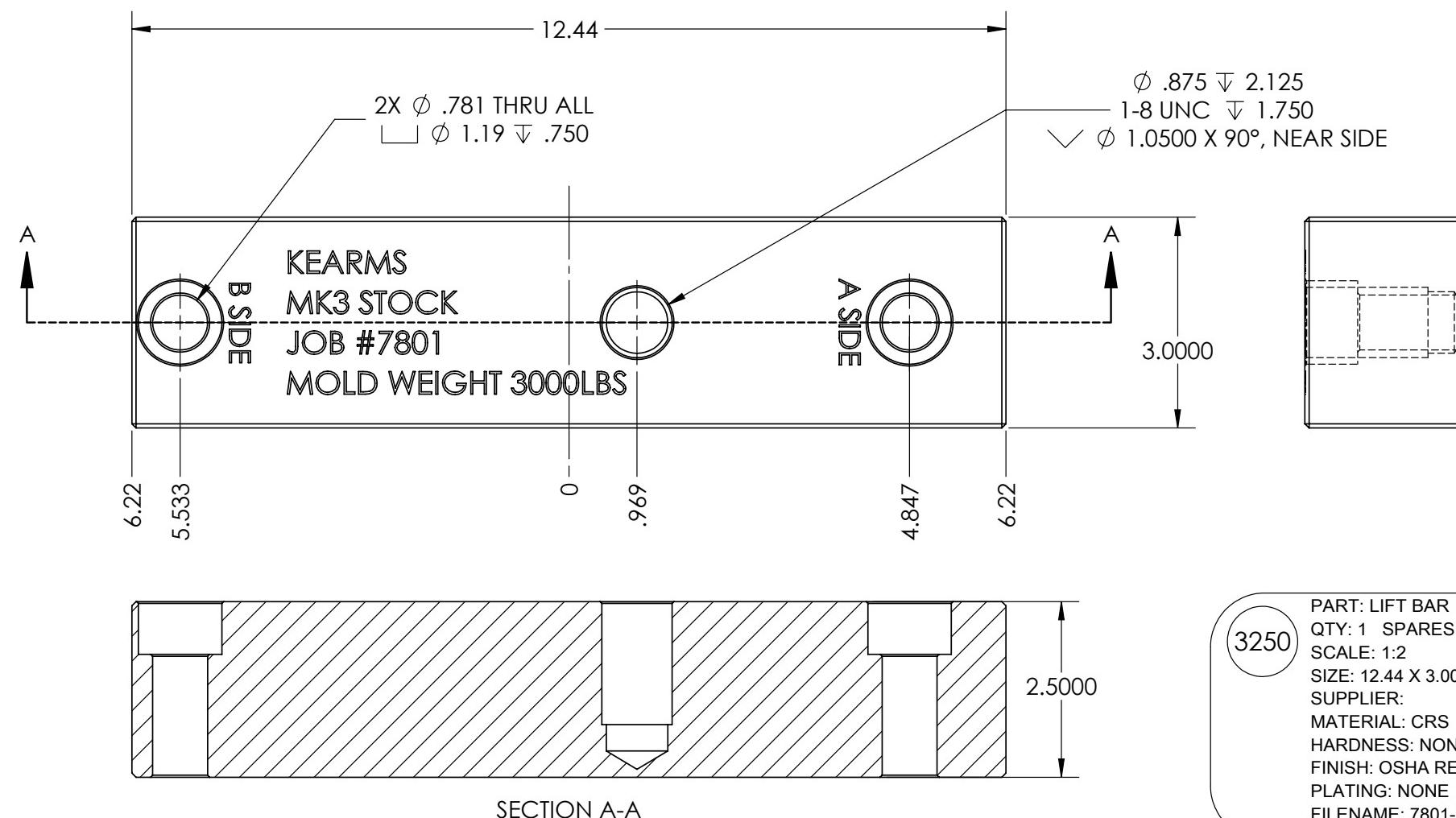
JOB#7801

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MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	SPERRY DESIGN SERVICES 1245 W Gascon Rd. San Tan Valley AZ 85143		
.XX \pm .01	Customer:	KE ARMS	Part Name:
.XXX \pm .001			KP15 RECEIVER
.XXXX \pm .0005	Part Number:	RECIEVER	Part Rev.
ALL SCREWS	Matl./Shrinkage	Designed By	Detailed By
.XXX \pm .005	30GF/.003	R.SPERRY	R.SPERRY
ALL EJECTORS	# of Cav.	Date:	Appv'd By
.XXX \pm .003	2	11/1/2021	-
ALL WATER, AIR, HYD. LINES	Scale:	Filename:	Size
.XX \pm .01	1:2	7801-3250	B
ANGULAR TOLERANCE			Sheet
XX° \pm 1°			33 of 47
XX.X° \pm 0.5°			
XX.XX° \pm 0.05°			

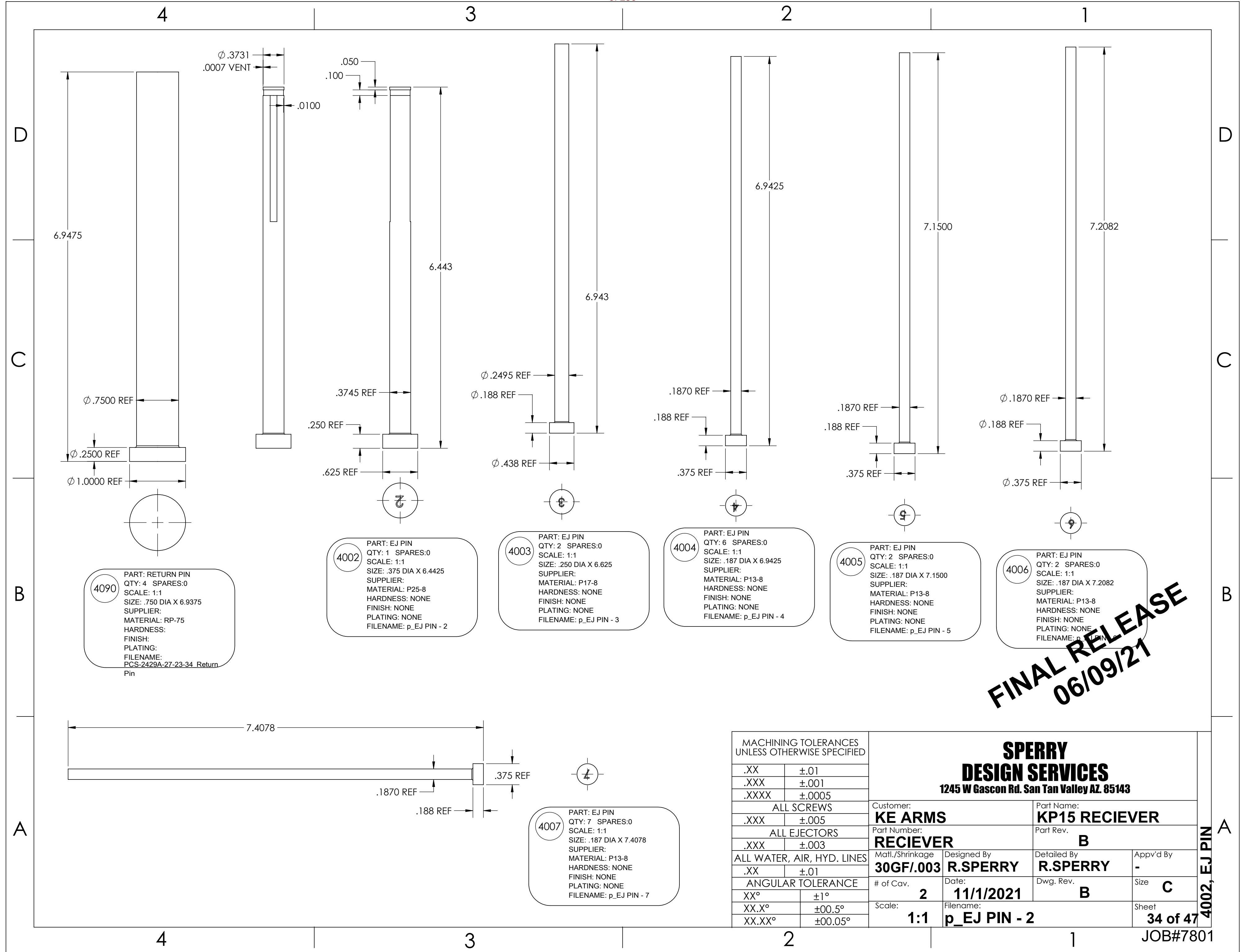
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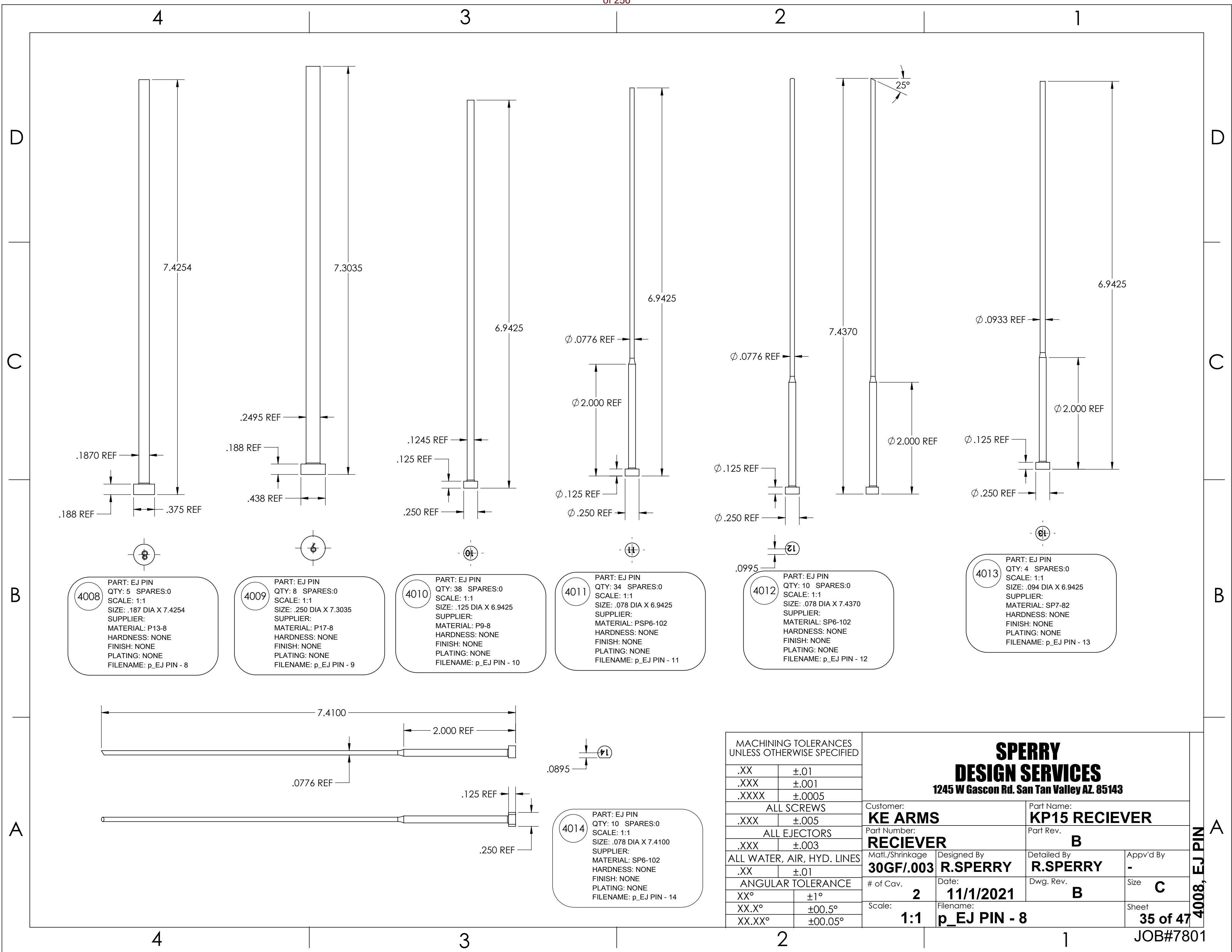
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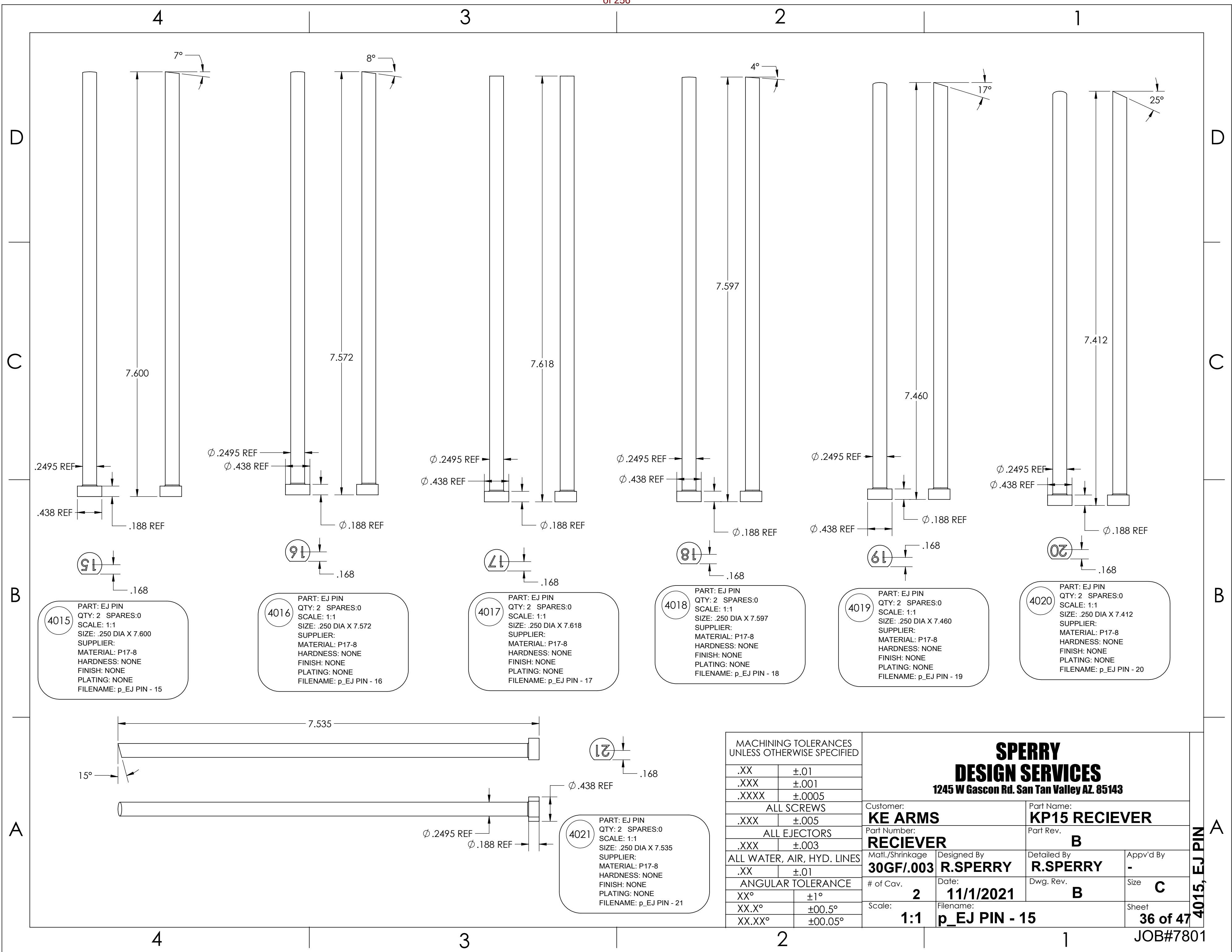
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JOB#7801





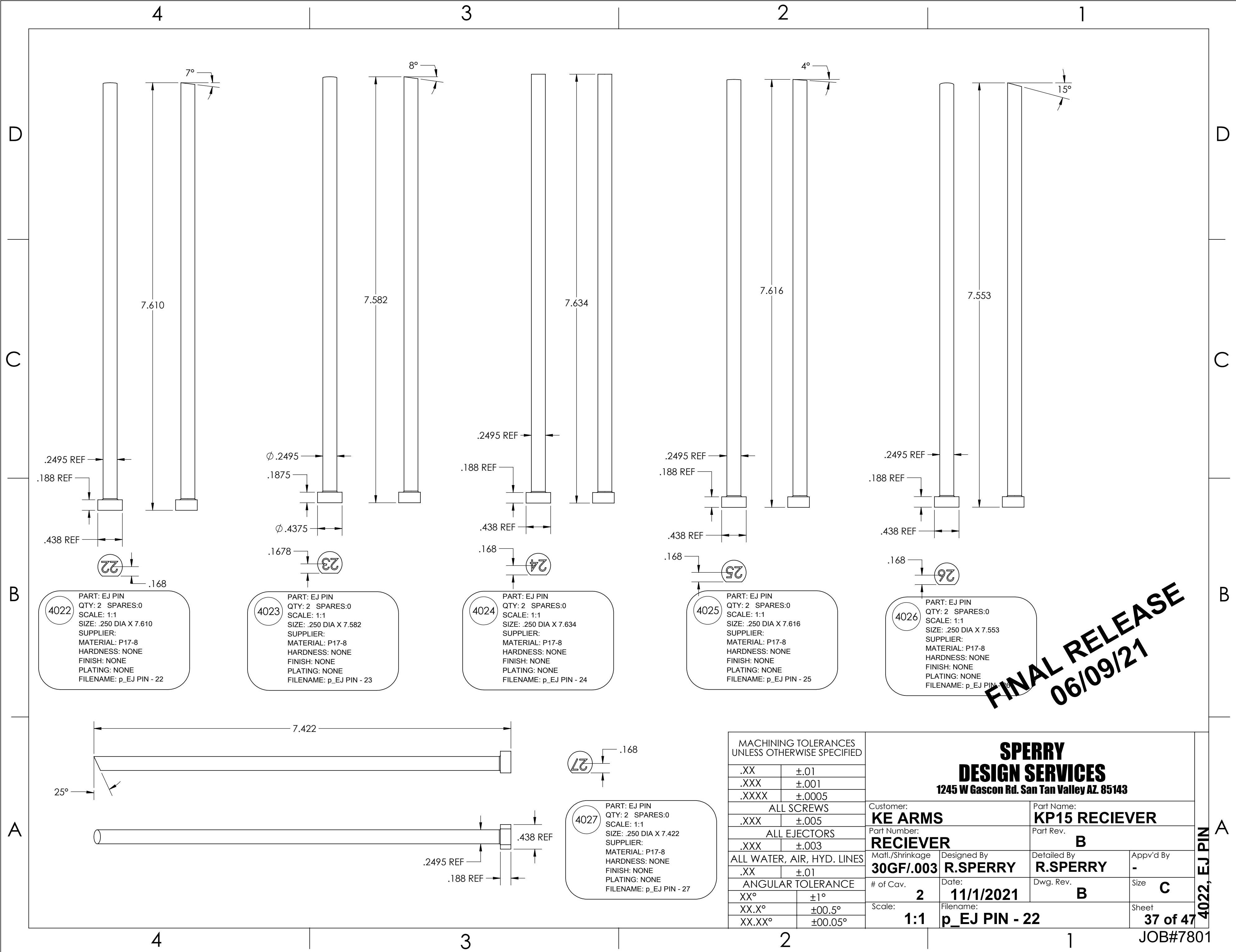


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FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED	SPERRY DESIGN SERVICES 1245 W Gascon Rd. San Tan Valley AZ 85143		
.XX ±.01	Customer:	KE ARMS	Part Name:
.XXX ±.001			KP15 RECEIVER
.XXXX ±.0005	Part Number:	RECIEVER	Part Rev.
ALL SCREWS			B
.XXX ±.005	Matl./Shrinkage	Designed By	
ALL EJECTORS	30GF/.003	R.SPERRY	Detailed By
.XXX ±.003	# of Cav.	Date:	Appv'd By
ALL WATER, AIR, HYD. LINES	2	11/1/2021	-
.XX ±.01	Scale:	Filename:	Size
ANGULAR TOLERANCE	2:1		B
XX° ±1°			
XX.X° ±00.5°			Sheet
XX.XX° ±00.05°			38 of 47

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1 JOB#7801

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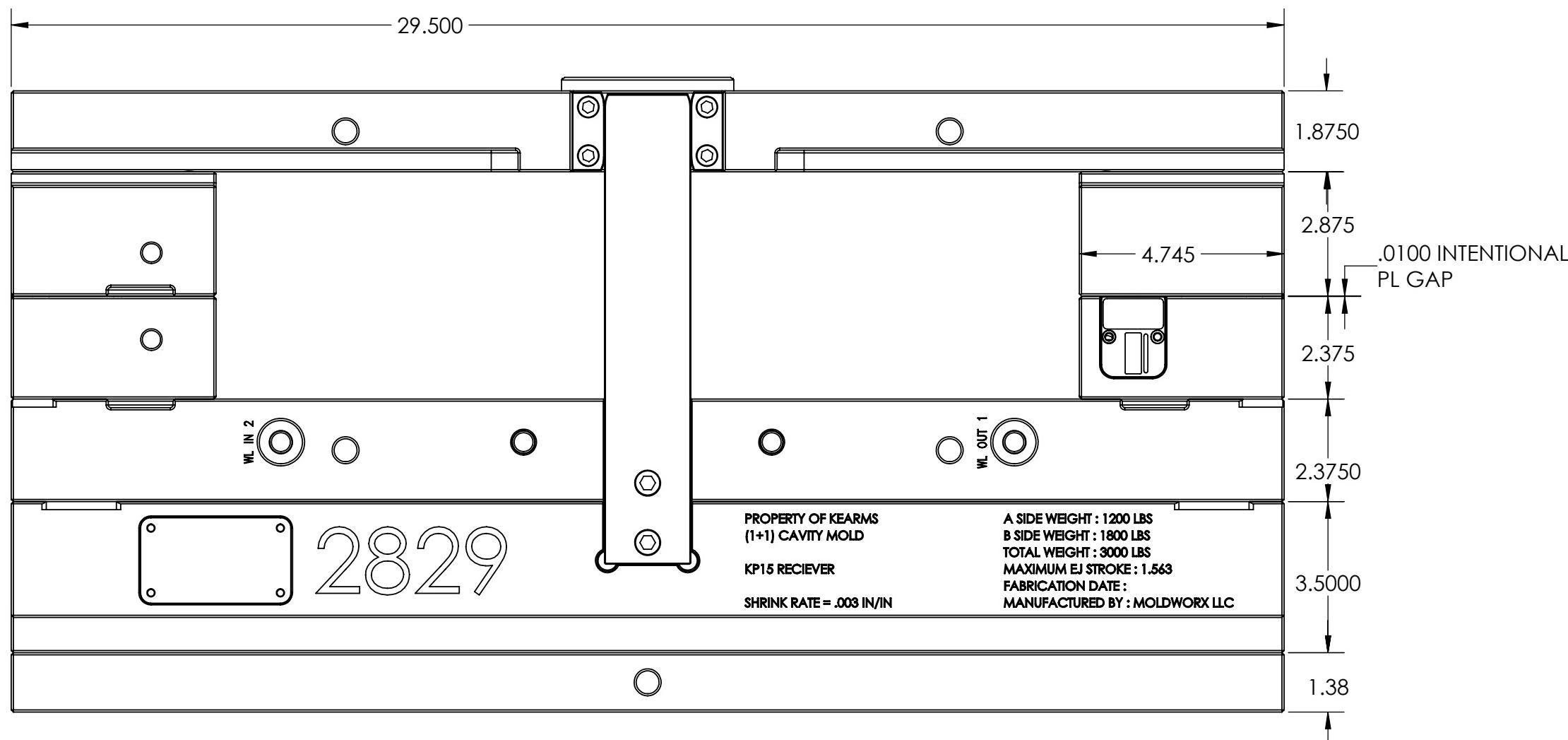
C

B

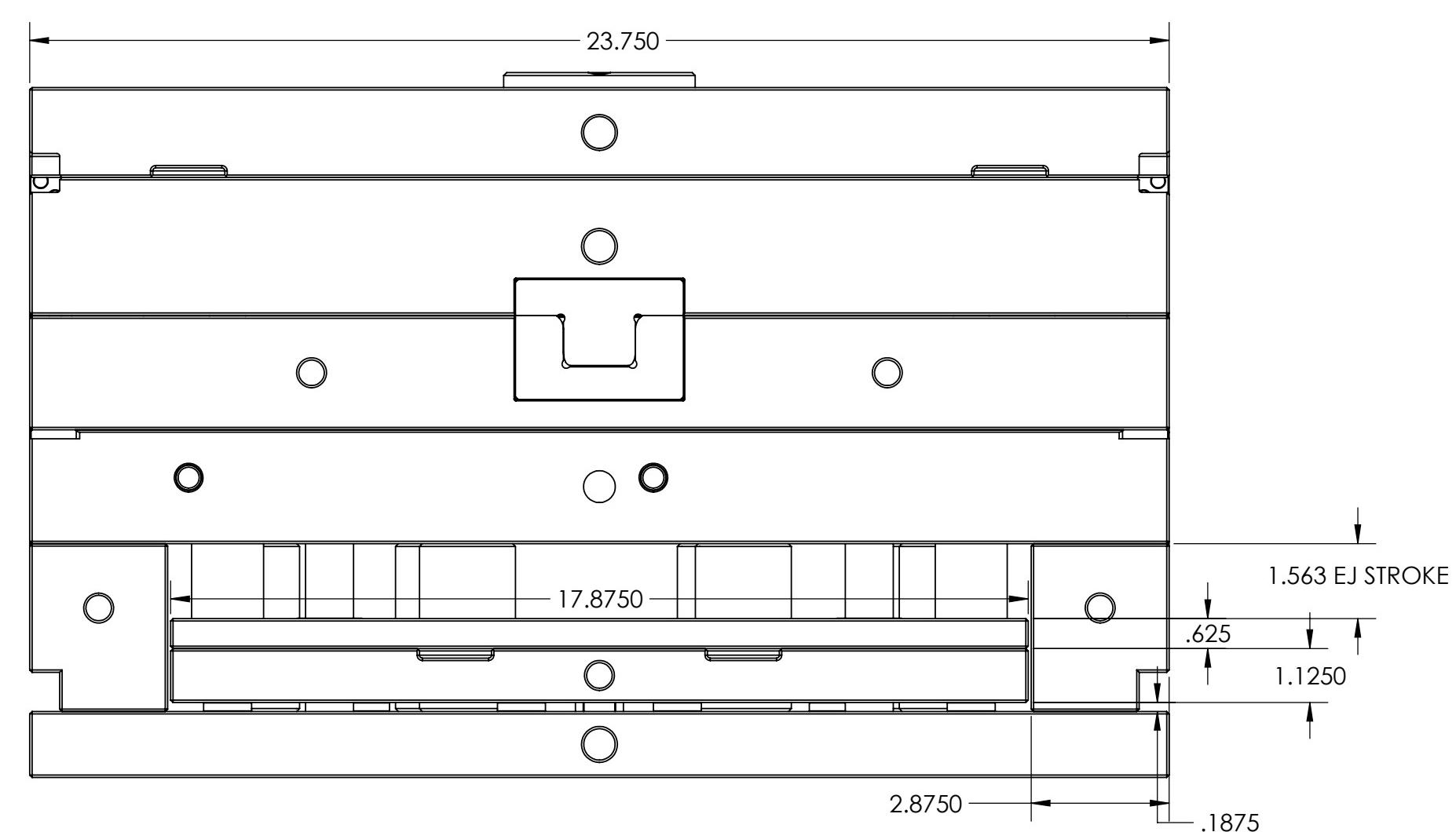
B

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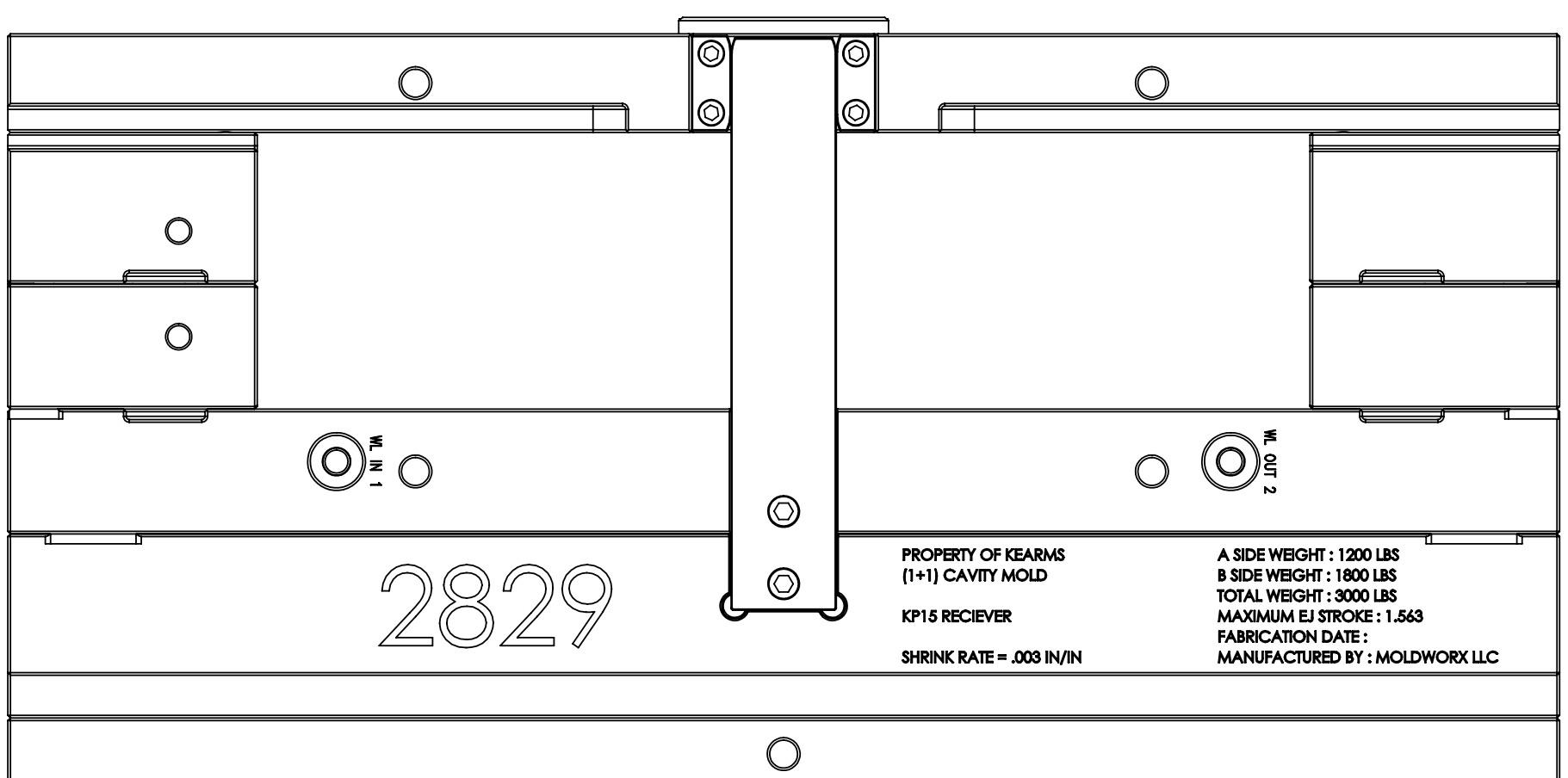
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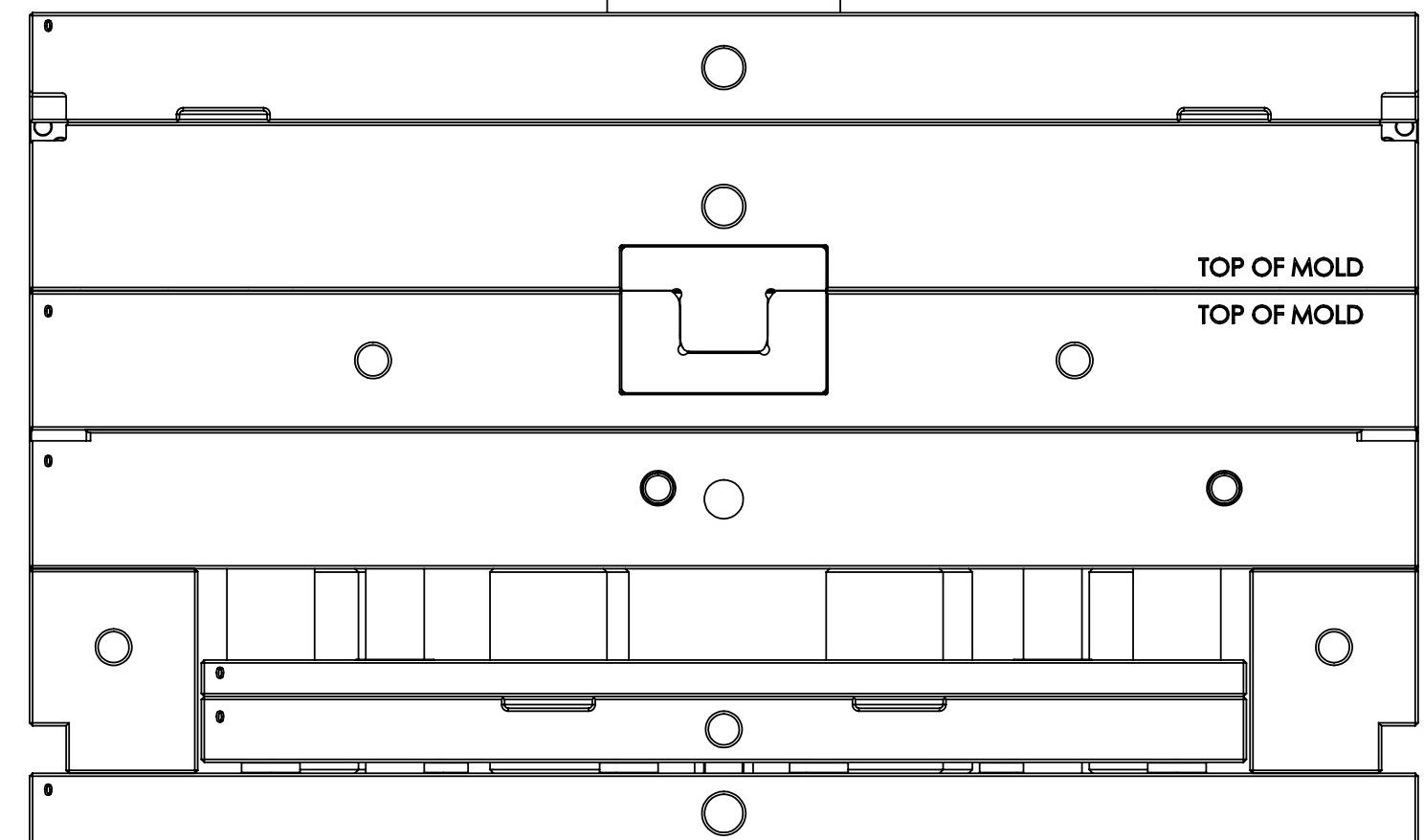
OPERATOR SIDE



BOTTOM OF MOLD



NON-OP SIDE



TOP OF MOLD

DETAIL NUMBER	QTY.	Rev.	DESCRIPTION	STOCK SIZE	SOURCE	VENDOR	MATERIAL/PART NO.
26			STOP DISC	10-32 1.00 DIA X .1875	MB	-	
12			SHCS	.5/8-16 X 2.00	MB	-	
4			TUBE DOWEL	7/8 DIA X 2.875	MB	-	
4			DOWEL	1/2 DIA X 1.250	MB	-	
4			SHCS	5/8-16 X 1.50	MB	-	
4			SHCS	5/8-16 X 7.50	MB	-	
4			SHCS	5/8-16 X 5.50	MB	-	
20			SHCS	1/2-13 X 1.00	MB	-	
1100	1	A	TOP CLAMP	23.750 X 29.500 X 1.875	MB	-	#2 STEEL
1105	1	A	A PLATE	23.750 X 4.750 X 2.8750	MB	-	#2 STEEL
1200	1	A	B PLATE	23.750 X 4.750 X 2.3750	MB	-	#2 STEEL
1205	1	A	SUPPORT	23.750 X 29.500 X 2.3750	MB	-	#2 STEEL
1230	1	A	RAIL	29.500 X 1.875 X 3.500	MB	-	#2 STEEL
1235	1	A	RAIL	29.500 X 1.875 X 3.500	MB	-	#2 STEEL
1240	1	A	BTM CLAMP	23.750 X 29.500 X 1.375	MB	-	#2 STEEL
1245	1	A	EJ RETAINER	19.875 X 29.500 X .625	MB	-	#2 STEEL
1250	1	A	EJ PLATE	19.875 X 29.500 X 1.125	MB	-	#2 STEEL
4090	4		RETURN PIN	.750 DIA X 6.9375	MB	-	RP-75
4190	1	-	LOC RING	4501	MB	-	4501
4200	1	-	SPRUCE BUSHING	B-606-112	MB	-	B-606-112
6000	4	-	LDR PIN	1.500 DIA X 5.750	MB	-	508-GL
6005	4	-	GE LDR PIN	1.00 DIA X 6.750	MB	-	310-GLS
6100	4	-	BUSHING	1.500 ID X 2.375	MB	-	LBB 12-23
6105	4	-	GE BUSHING	1.00 DIA I.D.	MB	-	GEB-100
6300	2	-	TOP LOCK	TL200X350	MB	-	TL222X350
7610	4	-	TUBE DOWEL	TD8-500	MB	-	TD8-500
2027	1	A	CAVITY INSERT	.5128 X .3152 X 1.0667	MW	-	S7

FINAL RELEASE
06/09/21

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		Customer: A	Part Name: KP15 RECIEVER
.XX	±.01		
.XXX	±.001	Part Number: RECIEVER	Part Rev. B
.XXXX	±.005		
ALL SCREWS		Matt./Shrinkage 30GF/.003	Designed By R.SPERRY
.XXX	±.005		
ALL EJECTORS		# of Cav. 2	Detailed By R.SPERRY
.XXX	±.002		
ALL WATER, AIR, HYD. LINES		Date: 11/1/2021	App'd By -
.XX	±.01		
ANGULAR TOLERANCE		Dwg. Rev. B	Size D
XX°	±1°		
XX.X°	±.005°	Scale: 1:3	Filename: 39 of 47
XX.XX°	±.00.05°		

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JOB#7801

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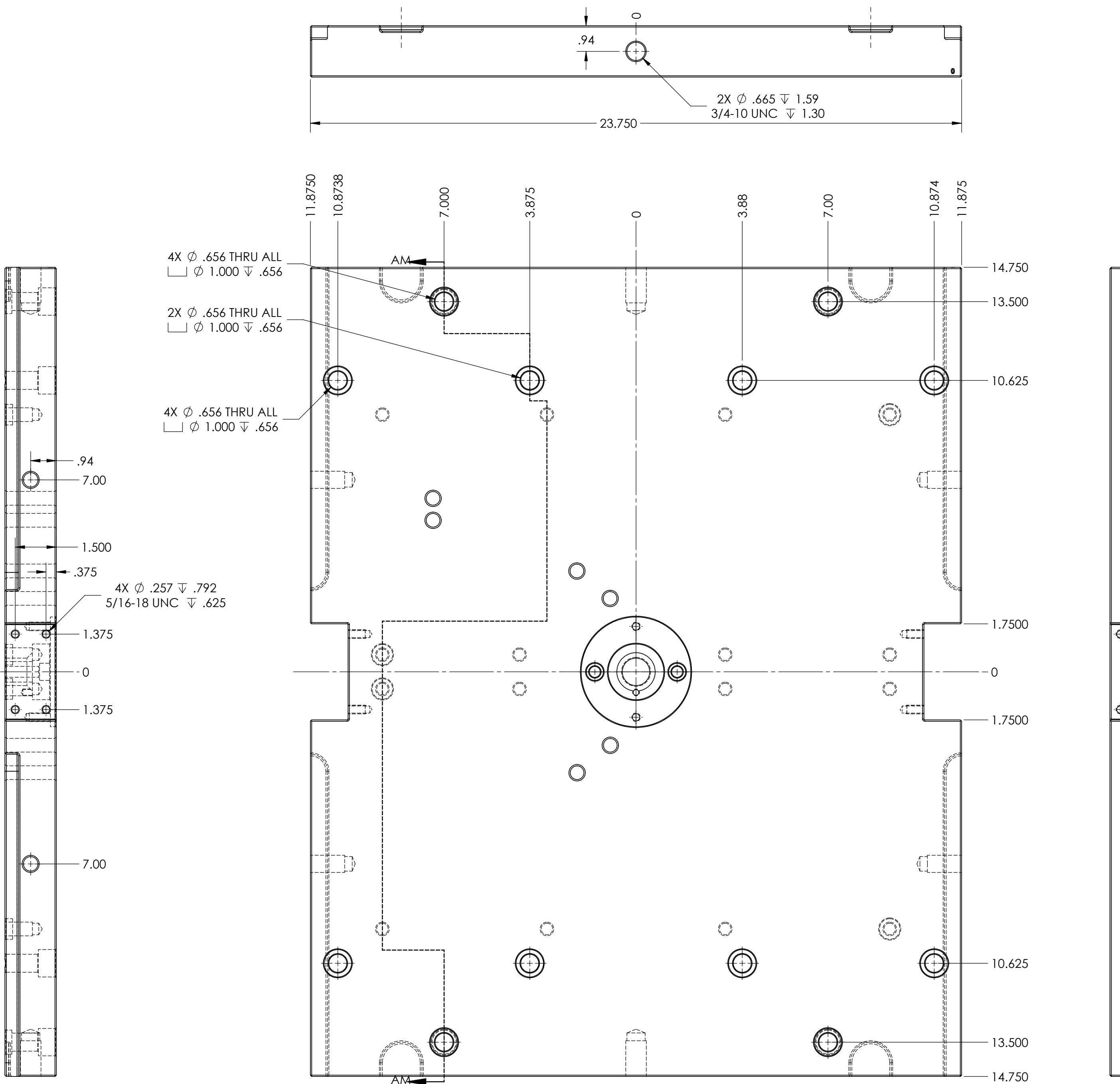
C

B

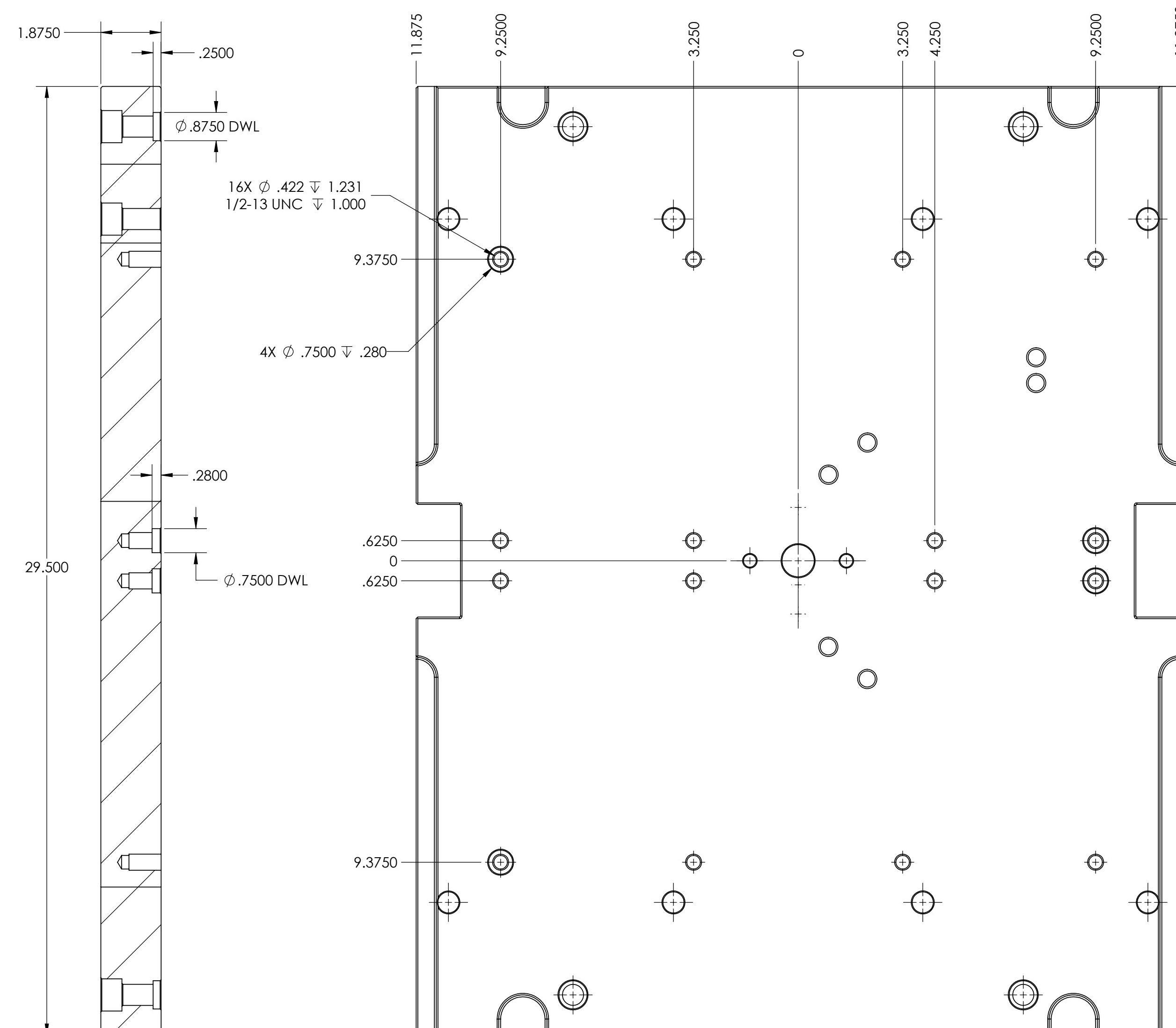
B

A

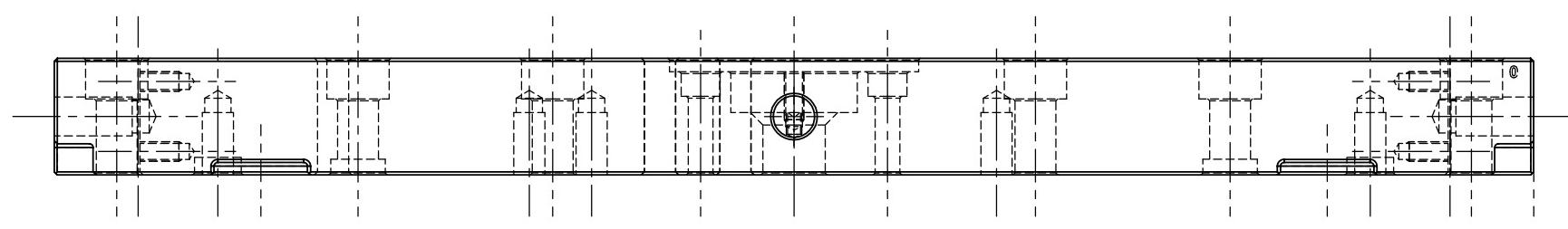
A



FINAL RELEASE
06/09/21



SECTION AM-AM



MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED			
.XX	±.01	Customer:	A
.XXX	±.001	Part Name:	SPERRY RECEIVER
.XXXX	±.0005	Part Rev.	B
ALL SCREWS		Matt./Shrinkage	
.XXX	±.005	Designed By	R.SPERRY
ALL EJECTORS		Detailed By	R.SPERRY
.XXX	±.002	Date:	11/1/2021
ALL WATER, AIR, HYD. LINES		Dwg. Rev.	B
.XX	±.01	App'd By	D
ANGULAR TOLERANCE		# of Cav.	2
XX°	±1°	Scale:	3:8
XX.X°	±00.5°	Filename:	PCS-2429A-27-23-34_TC-ASeries
XX.XX°	±00.05°	Sheet:	4

SPERRY
DESIGN SERVICES
1245 W Gascon Rd San Tan Valley AZ 85143

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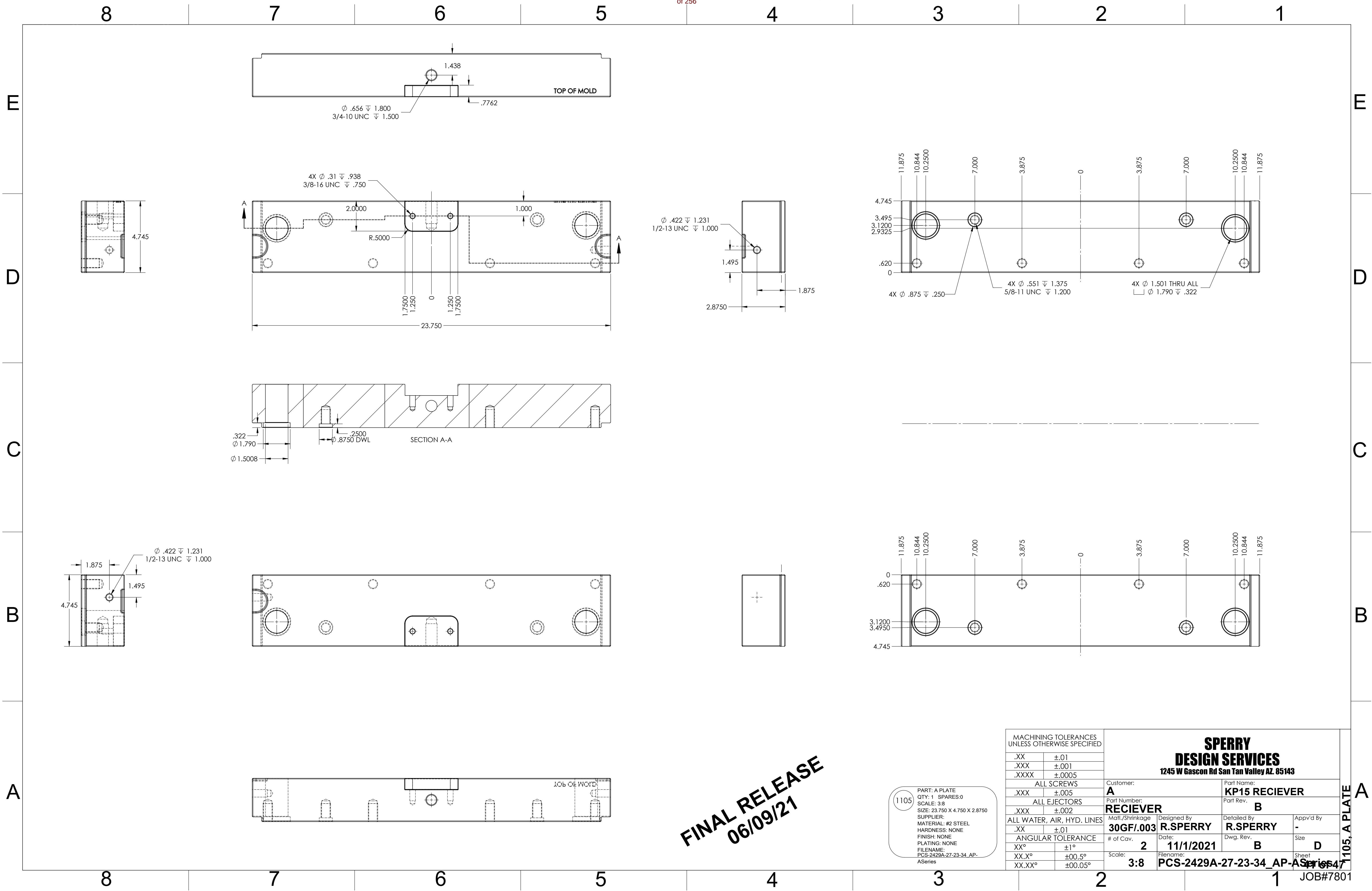
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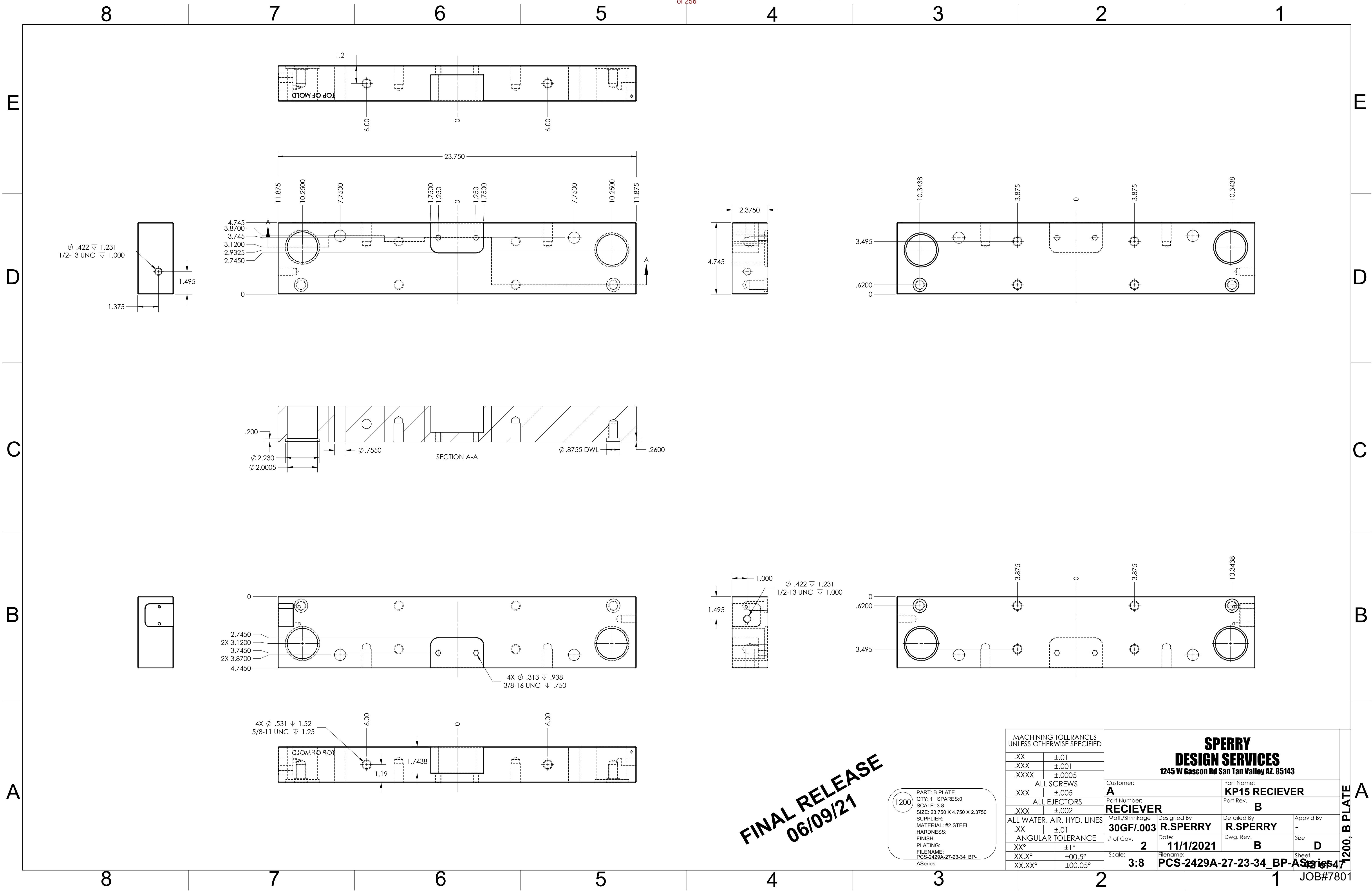
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JOB#7801





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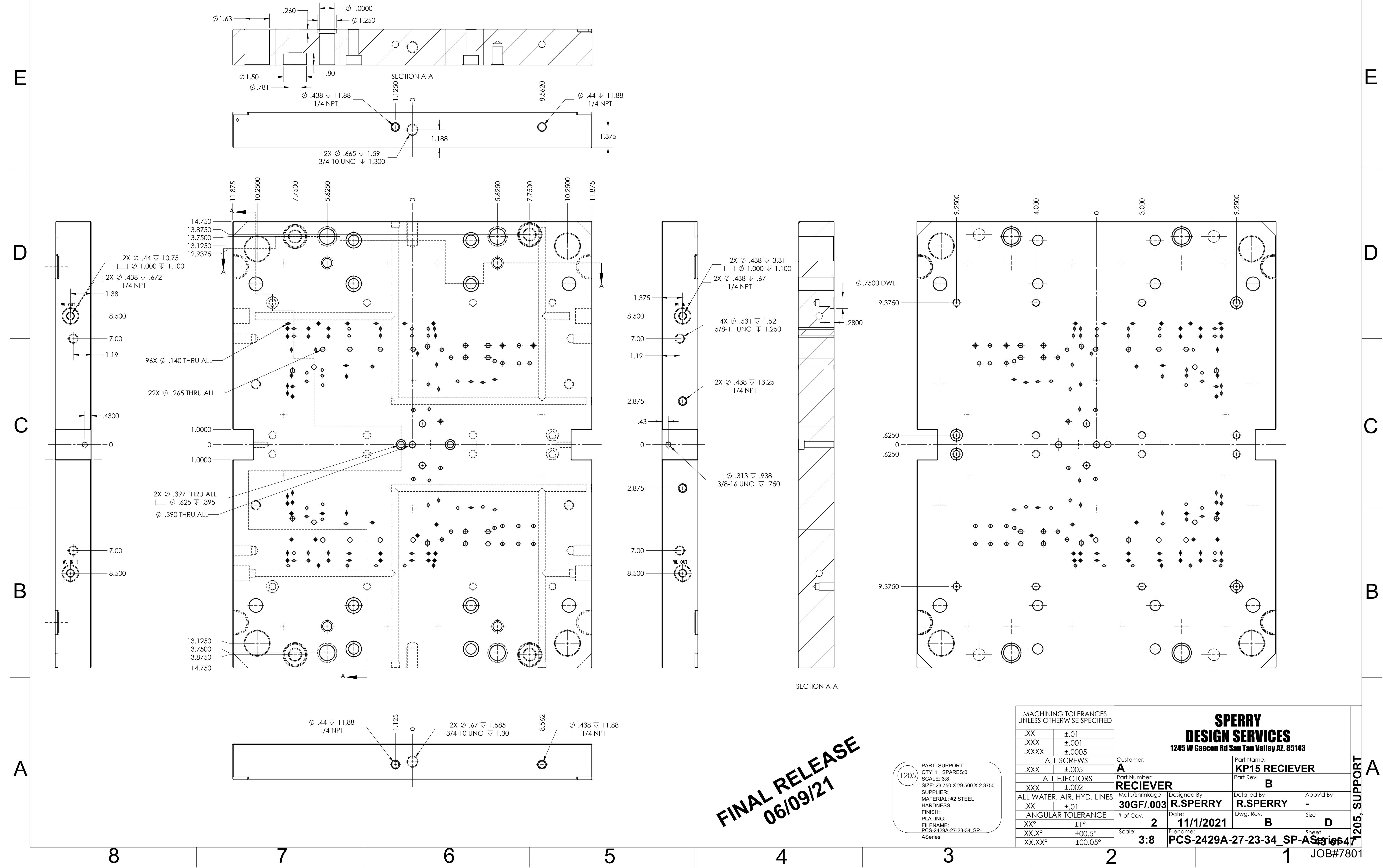
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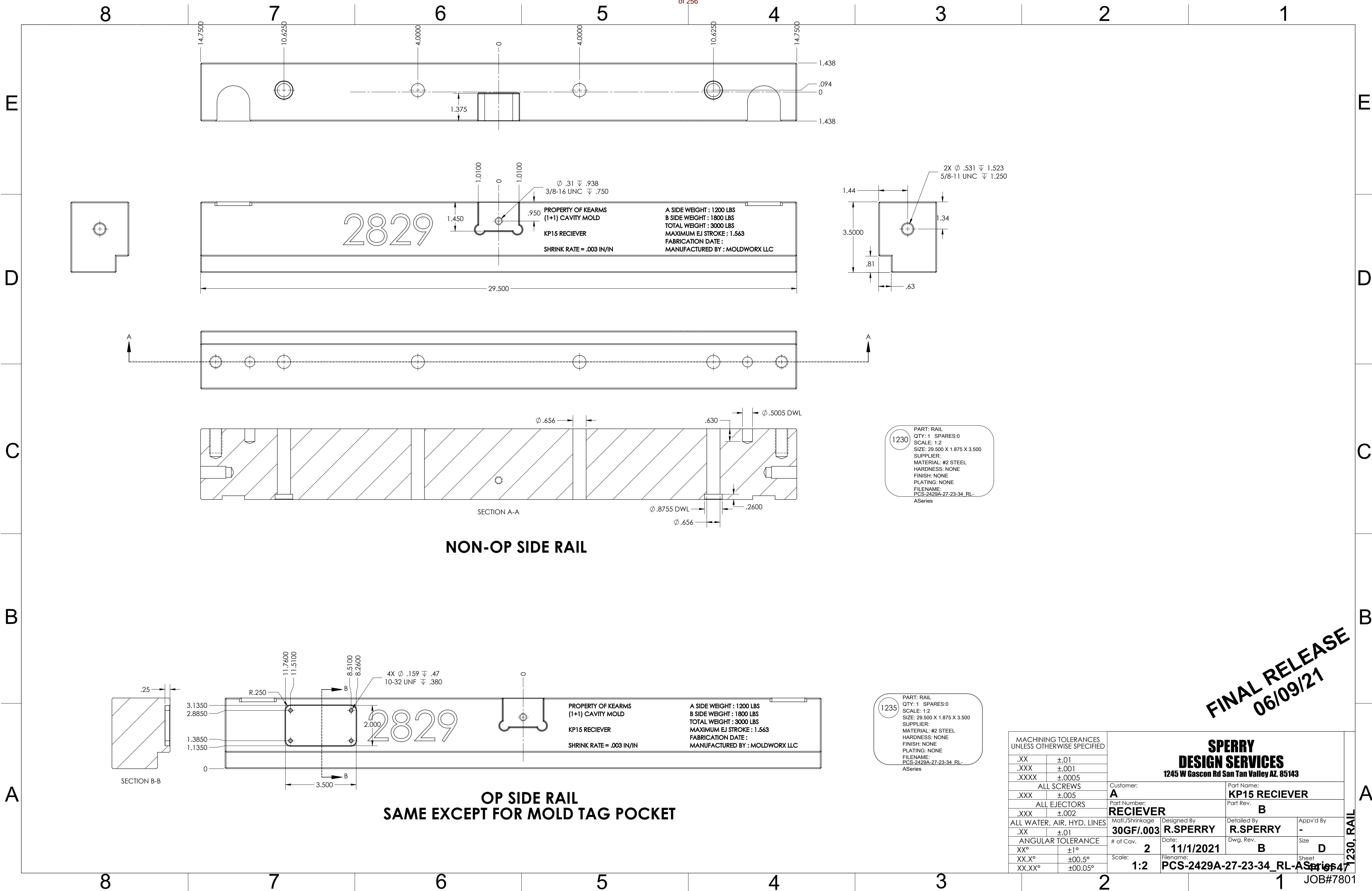
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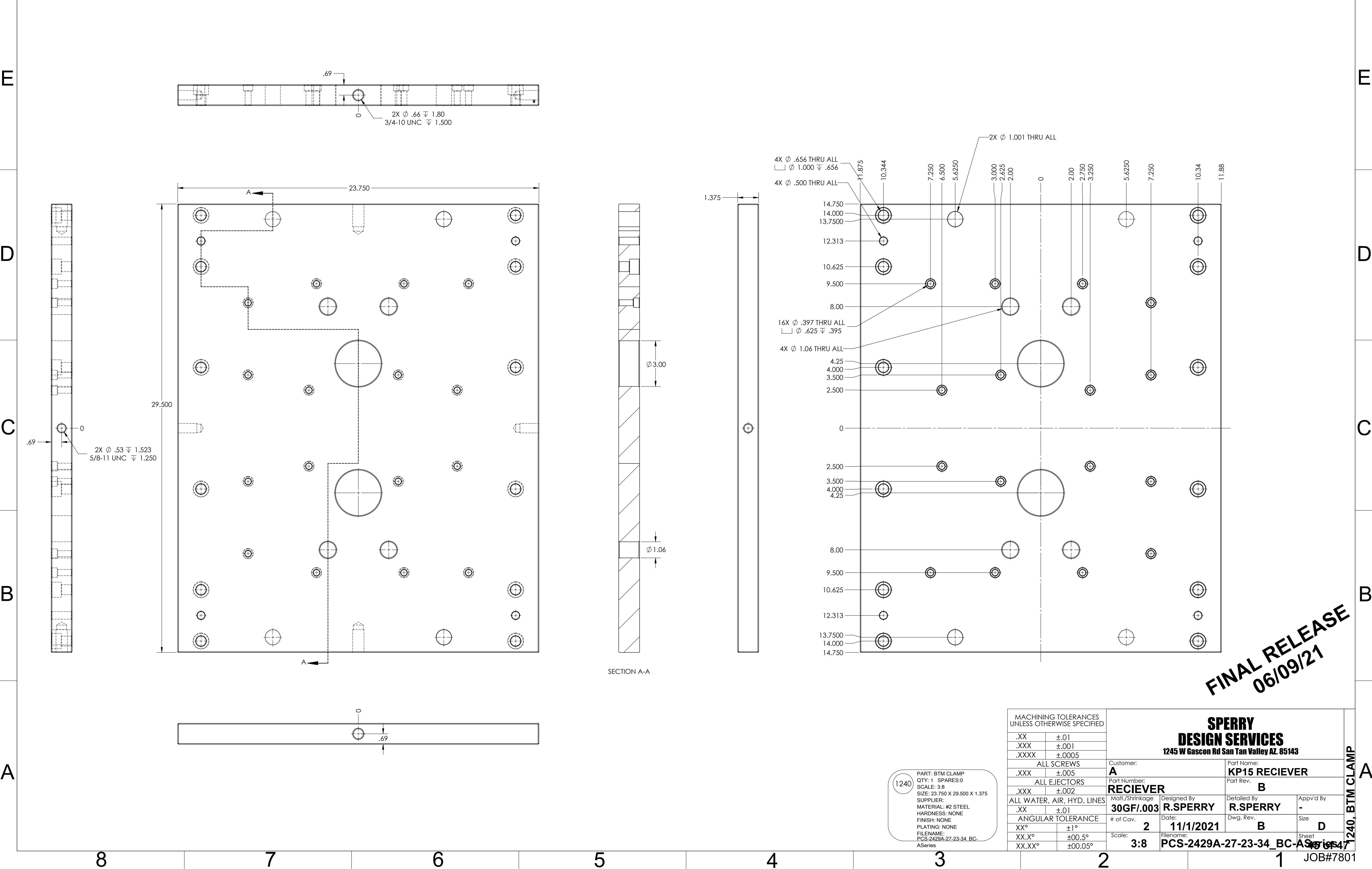
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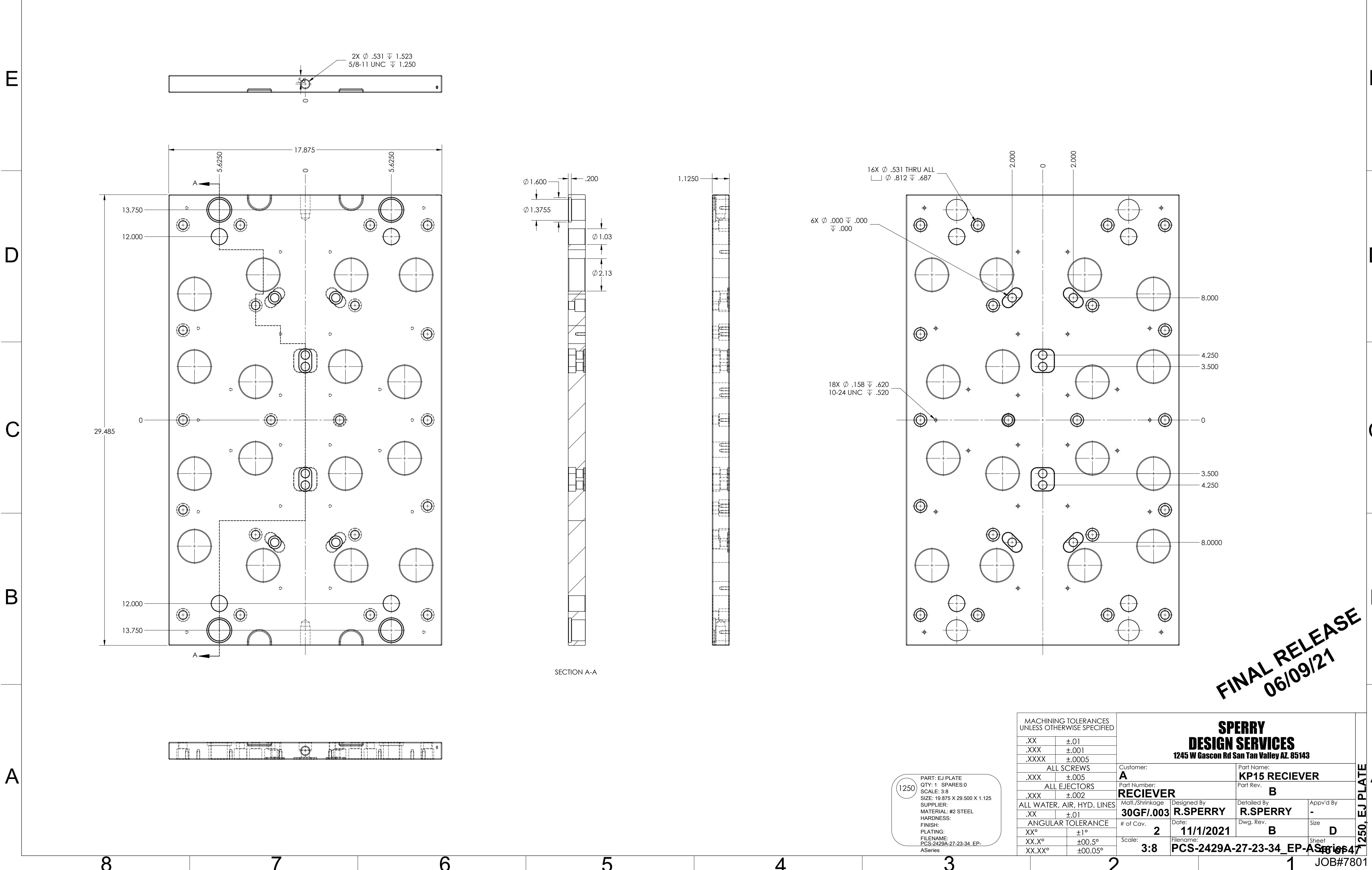


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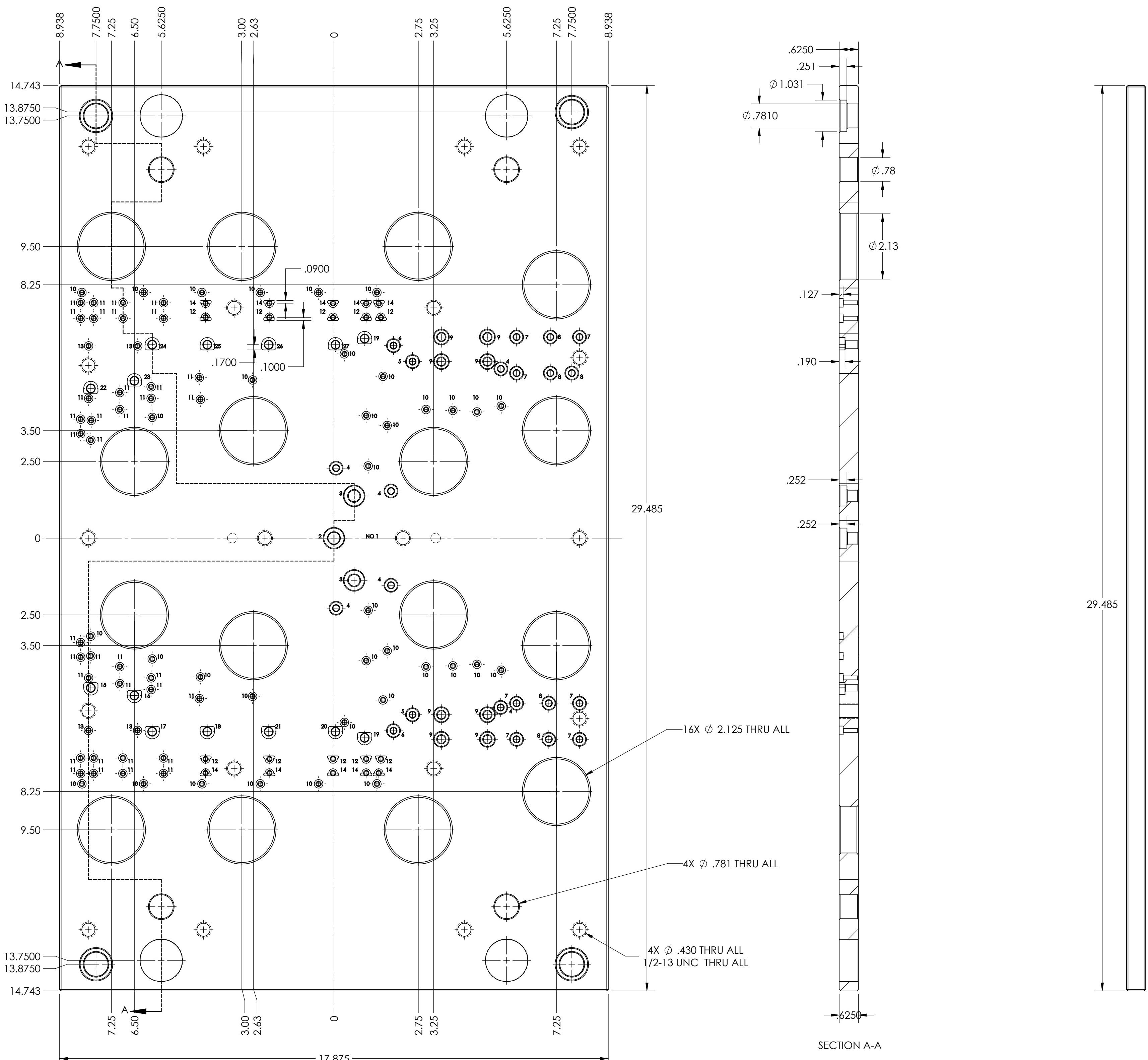


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8 7 6 5 4 3 2 1



8 | 7 | 6 | 5 | 4 | 3 | 2 |



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06/09/21**

SPERRY DESIGN SERVICES

45 W Gascon Rd San Tan Valley AZ 85143

MACHINING TOLERANCES UNLESS OTHERWISE SPECIFIED		SPERRY DESIGN SERVICES 1245 W Gascon Rd San Tan Valley AZ. 85143				
.XX	$\pm .01$					
.XXX	$\pm .001$					
.XXXX	$\pm .0005$					
ALL SCREWS		Customer: A		Part Name:		
.XXX	$\pm .005$			KP15 RECIEVER		
ALL EJECTORS		Part Number: RECIEVER		Part Rev.		
.XXX	$\pm .002$			B		
ALL WATER, AIR, HYD. LINES		Matl./Shrinkage	Designed By	Detailed By	Appv'd By	
.XX	$\pm .01$	30GF/.003	R.SPERRY	R.SPERRY	-	
ANGULAR TOLERANCE		# of Cav. 2	Date:	Dwg. Rev.	Size	
XX°	$\pm 1°$		11/1/2021	B	D	
XX.X°	$\pm 00.5°$	Scale: 1:2	Filename:	Sheet		
XX.XX°	$\pm 00.05°$		PCS-2429A-27-23-34_ER-A Series 47			



(/forums/transfer.html?&id=1544&z=16)&id=3131&z=16)&id=3132&z=16)&id=1541&z=16)

4537 Online (/forums/)



(/forums/transfer.html?id=1984&z=1)

Login (/login.html?ret=%2Fforums%2Ftopic%2Ehtml%3Fb%3D3%26amp%3Bf%3D4%26amp%3Bt%3D510472%26amp%3Bt%3D%2D)

Register ([/member/register.html](#))

? (/about/help.html)

Discussion Forums

Firearm Resources

Equipment Exchange

Build Your Dream Rifle (gunstruction.com)

[Guns & Gear Deals \(/deals/\)](#)



AR-15 (/forums/b/3_AR-15.html) » Build It Yourself (/forums/f_3/4_Build-It-Yourself.html)

Site Notices



Is The AFT Spying On YOU??? AFT and FBI Caught Spying On 1,000 US Gun Owners!

(<https://www.youtube.com/watch?v=RjpQt5TAF5s>)

10/29/2021 3:05:32 PM

[Previous Page](#)

Page 1 / 3

[Next Page](#) (/forums/AR-15/-ARCHIVED-THREAD-My-ultra-lite-build/4-510472/?page=2)

Posted: 9/13/2010 3:37:05 PM EDT

This was originally posted in the CavArms industry forum, but since it got deleted, the thread did too.

It started with a standard Cav15 lower bought from DSG Arms. First mods I made were to drill a hole for a QD socket and chop the back of the stock.



(http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0210.jpg)

Once the hole for the QD socket was drilled, the void needed to be filled in with epoxy. The void in this area is pretty small and doesn't take too much epoxy to fill in. I used DevCon, don't remember the exact formula. Once the epoxy cured I re-drilled the hole, as well as pre-drilled a hole for a wood screw.



(http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0214.jpg)

I then used a small amount of epoxy to glue the QD socket and a stainless steel wood screw in.



(http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0216.jpg)

I also stippled the pistol grip and front of the magwell. The two halves didn't quite match up when welded together, so I trued those up with a sanding block and 150 grit sandpaper as well. A little bit of gun oil after the sanding returns the color back to normal. If you want to really blend the sanded areas, very light sandblasting will blend it in with the factory finish.

(http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0225.jpg)

I then installed a universal buttplate from Brownells. The voids were filled in with more DevCon, then sanded flat. The buttplate was then epoxied in place and sanded down to shape. Afterward I drilled two holes and installed screws to give it a conventional appearance.



(http://i733.photobucket.com/albums/ww337/joshua_aston/DSC_0273.jpg)

I then sent off a Form 1 for it. Shortly after the Form 1 was sent in I deployed to Iraq. Got the approved form back while I was deployed.

I've got the rifle almost finished now, just waiting on a bolt to come in, need to pick up a flash hider as well. I'll get pics of the rest of the build posted up tonight.



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Unforgivable: the Controversy That Ended Her Career

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Rem Try It Now

Posted: 9/13/2010 3:59:13 PM EDT Great job. Looking forward to seeing compete gun. 😊🍺😊🍺😊

Posted: 9/13/2010 4:06:10 PM EDT

Looks good. I might have to do some of that stippling to one of my CAV lowers.

Posted: 9/13/2010 8:40:46 PM EDT

Here's the almost complete rifle. Upper is a RRA 9mm A4 style with the gas tube hole drilled by ADCO. Barrel is a Doublestar chrome lined lightweight, lightened even further by ADCO. Handguards are Clark carbon fiber shortened to fit. Progressive Machine & Tool titanium bolt carrier. CMMG .625 micro gas block. MGI adjustable gas tube. Emptied out CAR buffer. It's still missing the bolt, muzzle device, and an optic. All should be here shortly. The optic is going to be a Leupold DeltaPoint. It will be getting an ambi safety. Possible upgrades include a better and even lighter barrel down the road and a gunfighter charging handle. I'll also get the weight once I get it completed.

 (http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0356.jpg)

 (http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0358.jpg)

Close up of the gas tube. This actually made it extremely difficult to install the handguards.

 (http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0359.jpg)

Sorry I didn't get any pics of the upper going together. My camera wasn't charged yet and I didn't have the patience to wait for it.

Posted: 9/13/2010 9:55:50 PM EDT

What length is the barrel?

Posted: 9/14/2010 6:53:54 AM EDT

11.5"

Posted: 9/14/2010 8:18:22 AM EDT

Do you have a weight on it yet?

Posted: 9/14/2010 8:39:33 AM EDT

Not yet, I'll get it when it's completed.

Posted: 9/16/2010 4:13:41 PM EDT

Freakin' SCHWEEEEET... thanks for the detailed pics/captions. Looks great. 😊🏆🏆😊

Here she is complete. Weight with no optic came to 4 lbs, 1 oz. With Leupold Deltapoint, 4 lbs, 3 ozs.

 (http://i733.photobucket.com/albums/ww337/joshua_ aston/DSC_0366.jpg)

If I really tried, I'm sure I could knock it down to 4lbs even or less. I think I'll leave it where it is though. ETA: for now.

Going to tune the gas system and sight it in this weekend.

Posted: 9/17/2010 5:28:40 AM EDT

Great build

Posted: 9/17/2010 5:19:16 PM EDT

I like that a lot. Good build, and one of the lightest I've seen.

Posted: 9/17/2010 7:28:33 PM EDT

hows the balance?

Posted: 9/17/2010 10:06:44 PM EDT

Quoted:

hows the balance?

A little front heavy, but most of the weight is around the barrel nut area, so it still shoulders fine.

Posted: 9/18/2010 6:37:57 AM EDT

Quoted:

Quoted:
hows the balance?

A little front heavy, but most of the weight is around the barrel nut area, so it still shoulders fine.

Interesting. ~~What's the profile on the barrel?~~, ok, I see... "Barrel is a Doublestar chrome lined lightweight, lightened even further by ADCO." Good to know.

Quoted:

Quoted:

hows the balance?

A little front heavy, but most of the weight is around the barrel nut area, so it still shoulders fine.

Niiiiice.

Too many people build up these rifles and worry more about the weight than the balance, great looking shooter you got there!

ETA...

Doesn't bushmaster do the carbon 15 uppers? or are those just lowers?

Just thinking that with something like that this would be even lighter.... god... what a little toy thatd be.

Although I seem to recall hearing bad things about those?

Quoted:

Doesn't bushmaster do the carbon 15 uppers? or are those just lowers?

Just thinking that with something like that this would be even lighter... god... what a little toy that'd be.

Although I seem to recall hearing bad things about those?

I've got a Bushmaster Carbon15 upper. It weighs a couple ounces less than the 9mm upper, but it won't accept a standard barrel nut. It comes with its own barrel nut that's larger than the standard size, so it would've only accepted standard GI or equivalent style handguards. That would have ended up weighing even more than what the 9mm upper with Clark tube does.

Posted: 9/18/2010 8:05:47 AM EDT

What is the weight advantage of the 9mm upper? Is it just the lack of a FA and brass deflector? If so, wouldn't a smooth-side standard upper work just as well?

Posted: 9/18/2010 8:16:41 AM EDT

i like it
looks nice

Quoted:

What is the weight advantage of the 9mm upper? Is it just the lack of a FA and brass deflector? If so, wouldn't a smooth-side standard upper work just as well?

Only other smooth side upper I know of is the DPMS which from what I understand is actually thicker and heavier than a standard upper.

Posted: 9/18/2010 3:33:06 PM EDT

I'll compare notes with you in a few weeks. I've been building an ultralight hunting rig for a week now. Will be based on a 14.5" Colt Target Match lightweight barrel and a carbon fiber FF tube, locked in place with Larue parts, with venting drilled to further reduce weight. Will be mounted on a Cav Aid lower and topped with a Nikon 4.5-14x. I'll take pics during the build process once all my parts are here and send them to you. Gonna try that sponge camo fat thing too, heh.

Quoted:

Quoted:

What is the weight advantage of the 9mm upper? Is it just the lack of a FA and brass deflector? If so, wouldn't a smooth-side standard upper work just as well?

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Rainier Arms has smooth-sided uppers from Mega and Sun Devil, but they are both billet, and upon closer inspection, both appear to be cut a bit stouter than the typical upper, especially the Mega (13 oz. for a stripped upper! 😮)

Quoted:

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Les Baer & VLTOR also make smooth sided uppers.

well lack of FA only.

Posted: 9/18/2010 5:34:16 PM EDT

Nice build dude, that looks killer! Where you stationed in AK? Im about to PCS to Ft Rich in a few months.

Quoted:

Nice build dude, that looks killer! Where you stationed in AK? Im about to PCS to Ft Rich in a few months.

I'm at Eielson. Up by Fairbanks and Ft. Wainwright. Got about 5 months left up here.

Posted: 9/19/2010 8:21:23 AM EDT

Good rig. How do you engrave the plastic for the maker's mark?



(https://www.steepo.com/ghits/10h=yjqx4-cyKuvBtHch_8F986s8Hk-ikd2UX1gWnWOu04AqH2f08ujvk_G3934-11ec-8411-78ac440ce852&tt=Direct&att=3&cp)

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(<https://www.steepo.com/ghits/h=mok0O2-0Y-P7RdEStGB00rMUBIJCIG12tU&rid=f8c3f248-3934-11ec-8411-78ac440ce852&tt=Direct&att=3>)

I rarely give kudos on build threads, but this really deserves some. Very well thought out piece.

GREAT job man. You got a badass rifle - with good glass - that weighs a little more than a pistol.

Posted: 9/19/2010 4:23:57 PM EDT

Great build. I have a Carbon fiber FF tube on my LightWt build thinking of going with a small hole saw and cutting a series of holes in it (like the PRIs).

Again Great build.

Posted: 9/19/2010 7:45:32 PM EDT

Took it to the range today. Barely turned the gas on to get it cycle reliably, about 5/8s of a full turn. It's ejecting about 4:30, about 5 feet back. Had a few rounds left and got it roughly sighted in. I'll take it out next weekend and get it sighted in better and shoot for groups.

Posted: 9/20/2010 5:02:26 AM EDT

What RDS is that one there? Also can you explain the emp CAR buffer? You removed the weights out of it?

Posted: 9/20/2010 10:12:01 AM EDT

Quoted:

What RDS is that one there? Also can you explain the emp CAR buffer? You removed the weights out of it?

It's a Leupold DeltaPoint with the 3.5 MOA dot. And yes, I just removed the weights from the CAR buffer.

Posted: 9/23/2010 7:16:13 PM EDT

bump for awesome build.

Weighs about half what most folks on this board have and just as capable.

Posted: 9/26/2010 11:23:15 AM EDT

Quoted:

Great build. I have a Carbon fiber FF tube on my LightWt build thinking of going with a **small hole saw and cutting a series of holes in it** (like the PRIs).

Again Great build.

Just saw this. I don't know the tricks to it, but using a cutoff wheel on a dremel or a wood drill bit tears the carbon fiber. The cutoff wheel wasn't nearly as bad, only required light sanding to smooth out the torn edges. The drill bit took a while, I'm guessing a hole saw would be even worse. Don't know how a metal drill bit would fair. The amount of weight you'd be removing would be pretty minimal.

Posted: 9/26/2010 11:46:09 AM EDT

I like that QD mount

Quoted:

Quoted:

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The ones that spoke of success were using those little hole saws that have that diamond grit applied around the edges (like the guys cut into filerglass tubs with). I am going to give it a shot. Not really looking to reduce weight as much as increase cooling, add a slot for front sling attachment point, and to aid in griping the tube.

Posted: 9/26/2010 5:20:09 PM EDT

Quoted:

Quoted:

Quoted:

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That would probably work. I just know that a standard hole saw would likely tear up the carbon fiber pretty badly.

Posted: 10/22/2010 7:30:12 AM EDT

I think a hole saw running in reverse once the pilot was through would work without tearing up the carbon fiber.

Posted: 10/25/2010 6:58:08 AM EDT

tag-o

I like the build. And the weight. I might have to start thinking here....

Sweet build!

Brad



Quoted:

Quoted:

Quoted:

Quoted:

Great build. I have a Carbon fiber FF tube on my LightWt build thinking of going with a **small hole saw and cutting a series of holes in it** (like the PRIs).

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That would probably work. I just know that a standard hole saw would likely tear up the carbon fiber pretty badly.

Paint the area you are going to drill heavy with superglue and use a sharp drillbit, you don't need anything special. Hole saw will work so long as its sharp.

As an aside, I wonder if the plastic FCG from plumbcrazy would work and shave off a few more ounces

What do you use for the QD socket?

Czar

Posted: 10/28/2010 4:06:49 PM EDT

Quoted:

What do you use for the QD socket?

Czar

Uncle Mike's QD socket. Bought mine from Brownells.

Posted: 11/24/2010 9:48:25 AM EDT

Ordered RR 9mm upper and Cav lower. Mine will be 14.5 perm FH. Now I have to find a cheap barrel to send to Adco for .550 profile. Should be ready by Christmas.

Posted: 11/24/2010 5:40:41 PM EDT

Really nice build - very original idea and amazingly well executed. One question: It looks like the hole for the QD screw was drilled awfully close to the narrowest point of the angle between the stock and pistol grip. How sturdy is the lower in that area?

Quoted:

Really nice build - very original idea and amazingly well executed. One question: It looks like the hole for the QD screw was drilled awfully close to the narrowest point of the angle between the stock and pistol grip. How sturdy is the lower in that area?

There's a small pocket there that I completely filled with DevCon epoxy, so if anything, it's sturdier now than it was before the installation of the QD socket.

Posted: 12/7/2010 1:39:22 AM EDT

Progress Report:

Received the Cav lower and RRA 9mm upper.

Found a used H-Bar and got it on the way—will ship it to ADCO for the .550 profile and 14.7 length and do the pinned & welded flash hider.

Ordered the Clark fiber forearm, adjustable valve gas tube, JP low-mass bolt carrier and all the other parts.

Mine will be a cheaper version of the OP's build. No NFA will gain a few ounces on the barrel end.

I'll probably shorten the stock about like the OP did.

Want to drill my own hole for the gas tube—can't be too hard.

Might "clean up" the right side of the upper receiver - remove the unused dodads around the ejection port and make it nice and smooth, then get it powder coated or something. Just a thought—maybe not.

Looked high and low for a graphite barrel. Would have been a bitchin' 3.5 lbs and fixed the balance.

OK, Mr. Aston - what's the secret of locating the hole for the gas adjustment?

Quoted:

OK, Mr. Aston - what's the secret of locating the hole for the gas adjustment?

Put the barrel in the receiver, measure from the front of the rail to the gas adjustment port. Take the barrel out, put the barrel nut and tube on, measure, mark, drill. Seeing as the tube isn't really directional, all you need to get right is the length. It takes some force to get the tube on once everything else is together though. The gas adjustment port on the gas tube actually sits flush with the top of the handguard. So when you're installing the tube it'll push the gas tube down until it gets to the hole.



Quoted:

Quoted:

Great build. I have a Carbon fiber FF tube on my LightWt build thinking of going with a **small hole saw and cutting a series of holes in it** (like the PRIs).

Again Great build.

Just saw this. I don't know the tricks to it, but using a cutoff wheel on a dremel or a wood drill bit tears the carbon fiber. The cutoff wheel wasn't nearly as bad, only required light sanding to smooth out the torn edges. The drill bit took a while, I'm guessing a hole saw would be even worse. Don't know how a metal drill bit would fair. The amount of weight you'd be removing would be pretty minimal.

Just saw this pic today from Lancer. I haven't asked them yet about the holes in the CF, whether they were put in before or after it was cured...

The tubes are supposed to be out during SHOT...

 (http://www.lancer-systems.com/Images/LCH_3_LR.jpg)

Posted: 1/16/2011 10:26:21 PM EDT

Mine's done. Ejects 4:30 abut 7 feet. Is this good? The gas is 1/2 turn open, empty CAR buffer and a JP Low Mass BCG.

Thanks for the help, Aston, BTW.

Quoted:

Mine's done. Ejects 4:30 abut 7 feet. Is this good? The gas is 1/2 turn open, empty CAR buffer and a JP Low Mass BCG.

Thanks for the help, Aston, BTW.

Mine doesn't eject quite that far, maybe 4-5 feet at about 3:30/4:00. I had to open the gas up some more to get it to function in the colder weather.

Posted: 1/16/2011 11:02:41 PM EDT

Maybe the short barrel on yours? My bbl is 14.7". It was -14 at Birchwood and I was shooting 62 grain steel-case something-or-other. I'll post pics of the rifle in a day or so. Oh wait I have one of the bbl a few days ago after ADCO:

 (<http://rentbear.net/pix/14.7.jpg>)



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Coming Soon: 3D Printable AR-15 Lower with P-90 Style Stock

By **Foghorn** - May 21, 2013

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There's a damn good reason why we keep harping on 3D printing as the biggest thing to happen to firearms design since the CNC machine became cheap enough to put in every machine shop in America — namely, that cool stuff like this is now possible. This is a prototype (found on Reddit last night) of an AR-15 receiver with a P-90 style stock called the Charon. 3D printing means that anyone with an idea can make their dream happen, even if it's in the form of this unholy union.

UPDATE: Want to print it yourself? Here are the files. How about if you want to improve it? Download the source files and edit to your heart's content.

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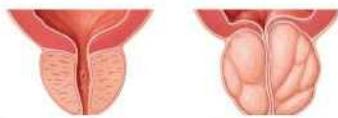
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MEET THE CHARON FAMILY OF 3D-PRINTABLE AR LOWERS [PHOTOS]

06/03/2013 01:00 PM | by Max Slowik ([/news/author/max_slowik](#)) Share (<https://www.guns.com/news/2013/06/03/meet-the-charon-family-of-3d-printable-ar-lowers-photos>)



Family.jpg)

(<https://images.guns.com/wordpress/2013/06/Charon-Family-The-Whole-Family.jpg>)





Adjustable-Stock-Mockup.jpg)

(https://images.guns.com/wordpress/2013/06/Charon-Family-Charon-Rifle.jpg)



11/5/2021
<https://www.guns.com/news/2013/06/03/meet-the-charon-family-of-3d-printable-ar-lowers-photos>

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KEA001807

(<https://images.guns.com/wordpress/2013/06/Charon-Family-Magwell->



vement-Detail.jpg)

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Edition.jpg)

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Pistol.jpg)



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Receiver.jpg)

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Receiver.jpg)



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KEA001810

Adjustable-Stock-Collapsed.jpg)

Developed by WarFairy, the Charon family is currently composed of *seven* 3D-printable AR-15 lowers. Taking some design cues from the FN P90, the Charons – save for the Def Dist-based lower receiver, that one is almost unchanged – use a modified pistol grip that adds structural support to the buffer tower, a weak point for 3D printed AR lowers.

They also add a little finger grip to the magwell which is pretty swanky.

These follow the P-15 lower receiver (<https://www.guns.com/news/2013/05/21/introducing-the-warfairy-p-15-3d-printed-ar-stock/>), also designed by WarFairy, a similar but segmented lower designed to be printable on low-volume 3D printers in discrete pieces.

You can download WarFairy's whole package at SendSpace. (<https://www.sendspace.com/file/zzv9vi>)

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Looking for an essential camp and field knife that has proven itself in the field. We love the Kershaw Camp 10 after putting it to the test on hunts and more.

Browning has a long legacy of making rifles, and these three are three of our all-time favorites.

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A LIGHTWEIGHT
PROJECT GUN
THAT'S **SUB 6**
POUNDS, SUB MOA
AND SUB \$1,200.

BY TOM MARSHALL
PHOTOS BY SEAN UTLEY

BANTAM MW

Echo Nine Three

May 20, 2016 ·

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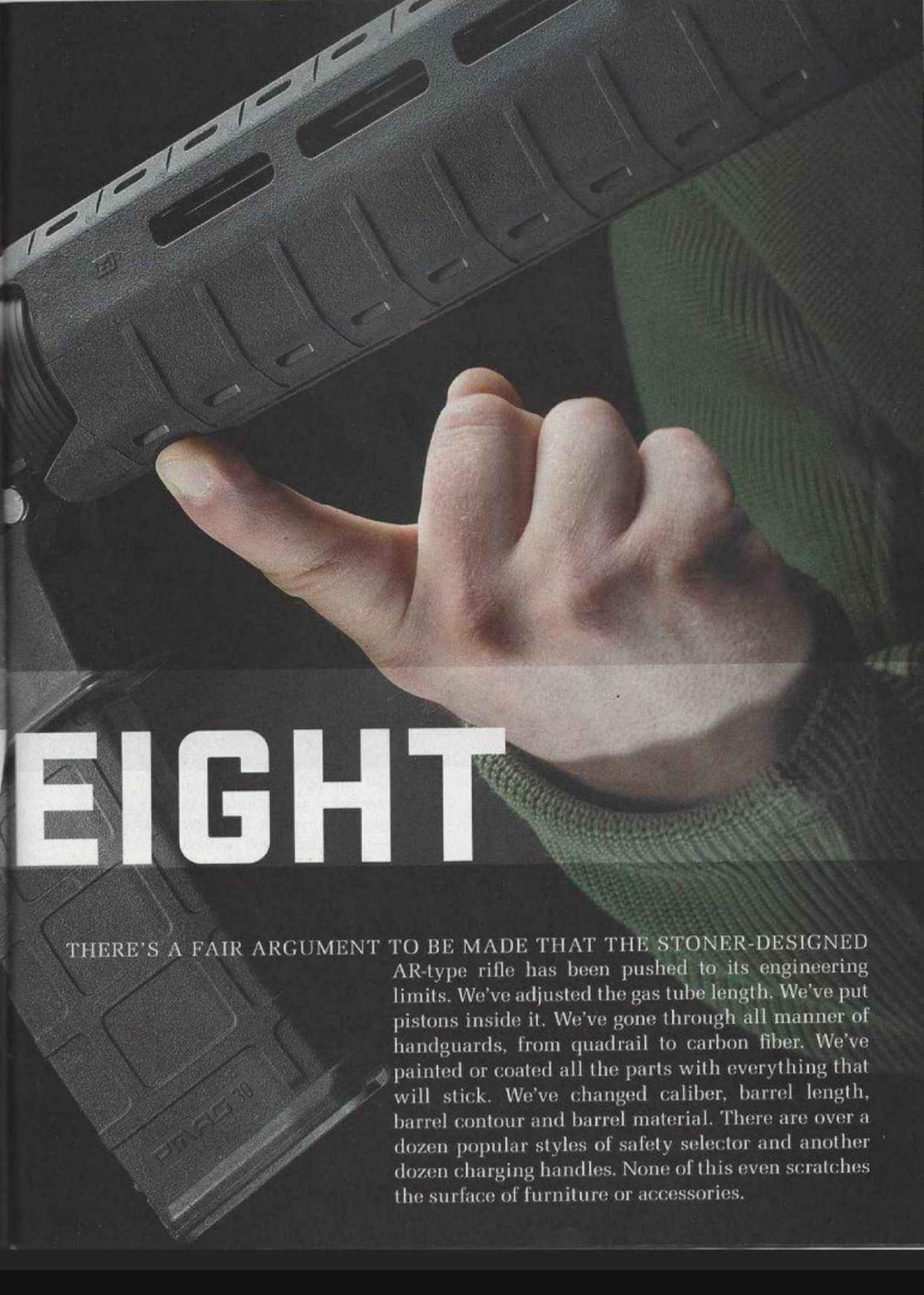
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THERE'S A FAIR ARGUMENT TO BE MADE THAT THE STONER-DESIGNED AR-type rifle has been pushed to its engineering limits. We've adjusted the gas tube length. We've put pistons inside it. We've gone through all manner of handguards, from quad rail to carbon fiber. We've painted or coated all the parts with everything that will stick. We've changed caliber, barrel length, barrel contour and barrel material. There are over a dozen popular styles of safety selector and another dozen charging handles. None of this even scratches the surface of furniture or accessories.

Echo Nine Three

May 20, 2016 ·

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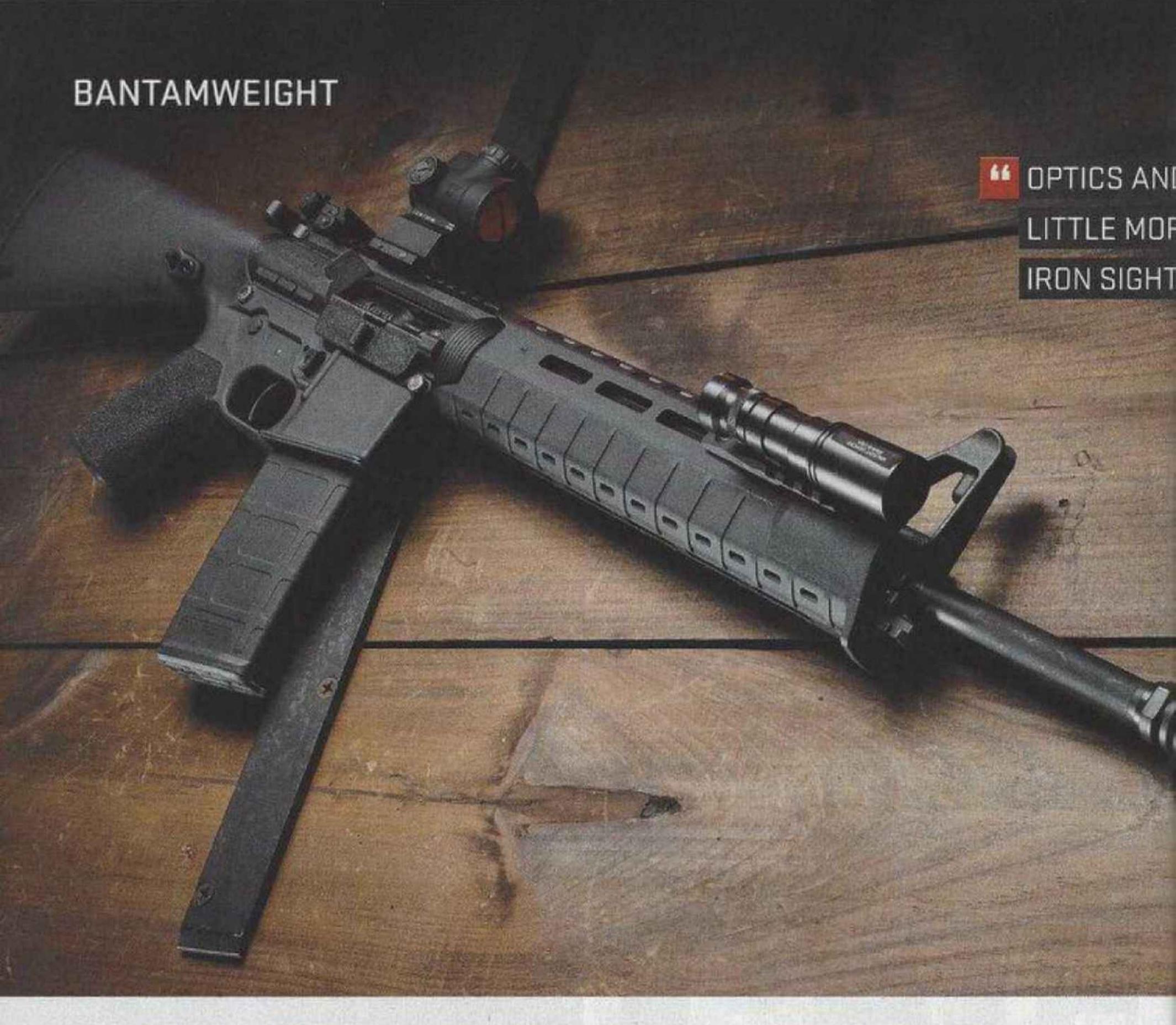
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BANTAMWEIGHT

OPTICS AND
LITTLE MORE
IRON SIGHT



One of the most recent market trends is toward weight reduction. While the endeavor is commendable, particularly from an engineering standpoint, some of these rifles are more like science experiments than daily shooters for the average consumer. I recently saw an example of a sub-4-pound rifle. I'm not sure what was more incredible — the feats of design required to pull it off or the price tag that was almost triple the cost of my first car. If you have the cash on hand, and the need/desire for the absolute lightest rifle on the block, that may be exactly what you're looking for. But I suspect many of you would be happy with a more moderate weight savings that you could actually afford.

Enter the following project gun, which I nicknamed "The Bantamweight." It's not the most minuscule AR, but it's nimble, accurate and reasonably priced in the current market. It took me a couple of weeks hunting for components and crunching the calculator. My particular end result may not suit your style, but the design is highly functional and will fulfill all but the most specialized applications. I made a point to maximize the use of polymer components throughout the build. A lot of companies are exploring the use of titanium in small parts like gas blocks, barrel nuts and takedown pins to shave off precious ounces. There's also Bravo Company's (BCM) highly successful KMR

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CESSORIES ARE GOING TO ADD A
WEIGHT, BUT THE SUB-6-POUND
CONFIGURATION IS READY TO SHOOT. ”

handguard series, which uses a magnesium alloy. The problem with exotic metals is that they're exotic and that usually equals expensive. Polymer, by contrast, leads to a reduction in weight and cost. It's easy to produce and mold. The caveat is that all polymers are not created equal. I researched and chose established manufacturers. Just be wary on your search for plastic parts.

The total weight of this rifle clocked in at 5.98 pounds with iron sights. Optics and accessories are going to add a little more weight, but the sub-6-pound iron sight configuration is ready to shoot.

UPPER HALF

The upper receiver group for this project was a joint endeavor between SIONICS Weapon Systems (SWS) and Kaiser Shooting Products. Both companies — neighboring shops in Tucson, Arizona — produce complete AR rifles as well as premium components. Kaiser's rifles are based on their high quality polymer upper- and lower-receiver sets. They are highly resistant to heat and impact. For this project, KSP was kind enough to lend us just an upper receiver. They are normally sold in matched pairs that weigh a combined 10.7 ounces. The receivers are molded as a set and the tolerance is extremely tight. The upper I used weighed 5.9 ounces. Kaiser also recently released a titanium bolt carrier group (BCG), which is the only "non-traditional" metal component in this build. The carrier is titanium, while the bolt is Carpenter 158 steel.



Kaiser's polymer upper receiver and titanium bolt carrier keep weight down. SIONICS' charging handle and flip-up sight are rugged, reliable additions.

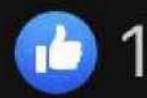
SIONICS' greatest strength is its barrels. These barrels, available in several lengths and contours, are made from 4150CMV steel. Every single SWS barrel that leaves the factory is X-ray and magnetic particle inspected for intensely tight quality control. For this build, I used a 16-inch lightweight profile barrel weighing 1 pound, 6 ounces. For the sake of a KISS-carbine concept, they affixed a .625-inch (inside diameter) F-marked front sight base and an A2 birdcage. The rear sight is a folding A2 style, also of SWS' design. The handguard is a midlength Magpul MOE SL.



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May 20, 2016 ·

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BANTAMWEIGHT

PERFORMANCE REVIEW

The bulk of testing was done with A&A Ammunition based out of southern Arizona (trainhardammo.com). Accuracy testing was done with several loads spanning the weight spectrum of .223 caliber bullets. On the low end was Black Hills 40-grain V-MAX; on the high end was Federal 77-grain SMK HP.

I should mention that many lightweight guns are going to open their groups a little bit. One reason for this is that pencil barrels are more susceptible to vibration and thermal shift. Another is that lightweight guns transfer more recoil to the shooter, which may throw rounds a little harder than heavier guns. Having said that, two of my test loads demonstrated that they were sub-MOA capable out of this build. One was Hornady's 55-grain FMJBT. This load gave me two rounds inside a quarter of an inch — with one ragged, slightly oversized hole. The third round went low left and opened the total group size to about 1½ inches. This was definitely shooter error. I pulled hard on the last shot and sent the flier out.

The other round that went below an inch was Black Hills 40-grain V-MAX. It gave me a tight group at around ¾ inch, with no fliers. The heavier SMK bullets did not fare well in this rifle, consistently stringing out between 2 and 3 inches. While the MatchKing bullet is widely vaunted for its accuracy, my little lightweight didn't care for it. Still, I was

excited to have built a gun that turned a couple of sub-MOA groups with a standard trigger.

FINAL TAKE-AWAY

The AR aftermarket is heavily saturated right now. Somewhere out there is every individual piece or part you ever dreamed of as the "perfect fit." This project is not a definitive listing. Consider it a starting point for those who want a lightweight rifle without paying exorbitant amounts for exotic materials or expensive custom machining.

It's taken me awhile to warm up to lightweight rifles. I've handled a number of them and none have really made me want to take it home. A 7- to 8-pound AR is light enough for me. However, the Bantamweight rifle was so easy to put together and so much fun to shoot that there may be a rifle very much like this in my near future. *

PERFORMANCE

The size of this Arisaka mini-scout belies its formidable 300 lumens and rugged construction.



Black Hills 40-gr. V-MAX	A&A Ammunition 55-gr. FMJ	Hornady 55-gr. FMJBT	Federal 77-gr. BTHP
Best Group (in.)			
0.7	1.1	1.48	2.3

Shot off bench at 100 yards



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BANTAMWEIGHT



Above: Echo93 gripwork includes gentle reshaping, 360-degree stippling and a triggerguard undercut. Left: The fixed stock can be cut to the shooter's preferred length and is capped with a recoil pad. The sample included a QD socket for sling points.

Enter Echo93 (E93), a small business owned by a retired law enforcement officer with years of LE and overseas contracting experience. His product line focuses primarily on the AK and its variants. But several years ago he pioneered a series of modifications to the GWACS polymer lower—mods that are now commonplace on polymer pistols. For less than \$150, E93 will perform a number of enhancements on your GWACS lower, including grip stippling, triggerguard under-cutting, fixed stock shortening to requested length-of-pull and recoil pad fitting. While I'm not normally a fan of fixed-stock lowers, this enhancement package piqued my interest, and Echo93 lent me their demo lower.

ACCESSORIZING

Today, iron sights are scoffed at as a primary sighting system. This setup lends itself to tradition, and I almost felt bad bolting accessories to it. However, I also wanted to present a realistic picture of how this rifle might sit in a safe, under a bed or in a trunk. For optics, I utilized Trijicon's new MRO red dot. This optic combines the light weight and fast acquisition of a traditional red dot with the combat-worthy

LOWER HALF

The lower half of this project comes from GWACS Armory. They have been producing A2-style, polymer lower halves for many years. The fixed stock style isn't for everyone. I know a number of shooters who have problems with the A2 length of pull, which was seemingly designed for professional basketball players.

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May 20, 2016 ·

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BANTAMWEIGHT



The Trijicon MRO is an ideal choice for keeping size and weight to a minimum while maintaining toughness.

construction of Trijicon's well-known ACOG. The optic and mount combined weigh less than half a pound. This minuscule increase in total weight is worth the added capabilities of a modern red dot sight.

Lighting is also a necessity on any weapon you might use past dinnertime. I utilized a mini scout-style light from Arisaka Defense. Arisaka is not a household name (yet) but has done wonders in advancing weapon light technology. They've taken one of the best designs on the market and streamlined it for increased efficiency and reduced weight. Arisaka lights are compatible with all standard SureFire scout mounts, as well as their own line of direct-attach mounts.

For accuracy testing, I did not use the MRO. I used a Burris MSR 4.5-14x42mm scope. This allowed me to remove any possible guesswork, estimation or shooter error from the bench test and provide the best evidence of the rifle's capabilities. If you're in the market for an AR scope, I highly recommend the Burris MSR. It offers fantastic optical clarity with no discernible tinting, as well as foolproof turrets that give positive $\frac{1}{4}$ MOA clicks. There's also a BDC

BUILD BREAKDOWN

SIONICS lightweight barrel with .625 F-marked FSB and barrel nut	\$ 260
Kaiser Shooting Products Polymer Upper receiver	\$ 120 (ESTIMATED)
Kaiser Shooting Products Titanium BCG	\$ 300
GWACS Fully populated lower receiver	\$ 220
Echo93 modification package	\$ 145
A2 Birdcage flash hider	\$ 10
VLTOR Gunfighter Charging handle	\$ 40
Magpul MOE SL Midlength handguard	\$ 40

TOTAL:

\$1,135
(APPROX.)

reticle, though I didn't use this function. Its max setting of 14X made grouping at 100 yards easy. I also used Burris QD rings that were easily adjusted and locked down tight onto the upper receiver.

I did not include lights or optics in my price breakdown. There is such a large array of accessories on the market as to create almost infinite configurations, each with their own effect on total build price. My price breakdown is a handrail to get you a functioning, iron-sighted rifle that is perfectly capable in its own right.

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Echo Nine Three

May 20, 2016 ·

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Magpul

Russell Phagan <sinistralrifleman@hotmail.com>

Wed 3/27/2013 3:27 PM

To: Shel G. Jones <sjones@gwacsdefense.com>

I told Drake you were getting ready to do some revisions to the mold and want to ensure compatibility with P-mags. He said the best way to contact him is via e-mail right now.

I would preface the conversation with there have been issues with Pmags dropping free in the past and you would like to resolve that to our mutual benefit. I would recommend asking him for the external dimension specs of the mag if they're willing to disclose them.

drake@magnus.com

Sent from my iPhone

FW: GWACS Armory Dealer Agreement/Pricing

Russell Phagan <sinistralrifleman@hotmail.com>

Wed 3/27/2013 1:44 PM

To: Shel G. Jones <sjones@gwacsdefense.com>

Shel,

FYI, Brownells seems to be a dead end like DSG.

Russell Phagan
480-466-8832

From: paul.levy@brownells.com
To: sinistralrifleman@hotmail.com
Subject: RE: GWACS Armory Dealer Agreement/Pricing
Date: Wed, 27 Mar 2013 13:31:03 +0000

Russell,

Thank you for getting in touch with me. For the time being we are going to pass. The price point is likely a little steeper than what our customers are going to bear.



Paul Levy
Category Manager
Brownells, Inc.
200 S. Front Street, Montezuma, IA 50171
Email: paul.levy@brownells.com
Phone: 641-623-5401
Direct: 641-623-8026
Join us on [Facebook](#) and [Twitter](#)



From: Russell Phagan [mailto:sinistralrifleman@hotmail.com]
Sent: Monday, March 25, 2013 10:51 AM
To: Paul Levy
Subject: GWACS Armory Dealer Agreement/Pricing

Paul,

Attached is the new GWACS Armory dealer agreement, current pricing structure, and CAV-15 MKII information. The dealer agreement has been modified to expressly allow you to advertise pricing lower than MSRP to dealers without violating MAP.

From my past experience in dealing with Brownell's, it appeared your company prefers smaller orders on a regular basis rather than large amounts of product all at once. I discussed this with Shel, and they are agreeable to giving you preferential pricing with lower minimum orders than listed in the agreement. If you decide to move forward with carrying the CAV-15 MKII again, we can work out the exact terms of that agreement.

Receivers without fire control can usually ship in 7 days or less. Receivers with fire control can currently usually ship in 2-3 weeks for quantities of 24 or less. Black, OD Green, Flat Dark Earth, Zombie Green, and Pink are the standard colors.

Please contact me if you have any questions. Thanks for your consideration,

Russell Phagan
Independent Sales Rep
GWACS Armory
480-466-8832

They're learning...

Russell Phagan <sinistralrifleman@hotmail.com>

Tue 11/5/2013 6:35 PM

To: Shel G. Jones <sjones@gwacsdefense.com>

<http://www.thefirearmblog.com/blog/2013/11/04/american-tacticals-50-omni-hybrid-ar-15/>

Look at all the places they beefed up on this one....



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American Tactical's \$50 OMNI Hybrid AR-15 Lower

Posted November 4, 2013 in AR-15, Rifles by Steve Johnson with 28 Comments

Tags: ar, ATI



American Tactical Imports have developed a low cost AR-15 lower receiver made of a fiberglass-composite polymer with a zinc metal insert which encompasses the buffer tube collar and rear take down pin. The metal insert prevents the receiver from cracking due to force applied to the rifle's stock, which is arguably the achilles heel of traditional all-polymer lowers.

The company has produced a number of YouTube videos to demonstrate the strength of the OMNI Hybrid. The first video shows the receiver being run over by an 11,000 lb. fork lift. The second video shows 270 lb weights being hung from a buffer tube installed on the OMNI Hybrid.



HAVE A TIP? Let us Know!





HAVE A TIP? Let us Know!

The stripped receiver weighs 8 oz, less than an aluminum receiver but more than an all polymer or magnesium receiver. If you were a polymer-lower-skeptic, this might be the cheap and light lower you were looking for. The MSRP is \$49.95.



Steve Johnson

I founded TFB in 2007 and over 10 years worked tirelessly, with the help of my team, to build it up into the largest gun blog online. I retired as Editor in Chief in 2017. During my decade at TFB I was fortunate to work with the most amazing talented writers and genuinely good people!

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Ergo

9 years ago

i'll spend the extra 12 bucks and buy a forged lower.

10 0 Share >



Brandon Ergo

9 years ago

Yeah I was thinking the same thing. When PSA does a sale on blemished lowers, they're almost as cheap.

3 0 Share >



Ergo

Brandon

9 years ago

It isn't just PSA, AIM does a natmil for 70 shipped, Anderson's are 55 plus shipping hell you can find Aero lowers for 75. The savings on poly lowers are wiped out when you have to do another FFL transfer to for the free replacement these poly lower companies send out.

2 0 Share >



RocketScientist Ergo

9 years ago

Hell, Kerri's Guns has Anderson Manufacturing forged stripped lowers for \$55

It's not a question of if you see one or not. It's a question of how often. I've never seen a gun that has a lightweight build, i don't see a reason NOT to spend the extra \$5 for a forged aluminum lower.

0 0 Share >



Sparky
9 years ago

In the future, all ARs will have polymer lowers and people will scratch their heads and wonder why those silly people used metal ones back in the day.

7 0 Share >



M. 9 years ago

With my luck, it would still break at the buffer spring.

4 0 Share >



José Pulido 9 years ago

Polymer technology is going to pick up fast. In 20 years they'll look at our polymers how we today look at bakelite.

It won't be long before you'll see a completely polymer AR-15 lower that's just as stable as a 7xxx Al lower.

2 0 Share >



Luke Barreto 9 years ago

I ordered two Omni's during the AR rush a few months ago and just had one of mine break at the buffer tube after 100 rounds. I sent it back to ATI and they said they'll send me their "2nd-gen" Omni. I'm hoping it's this one.

2 0 Share >



RocketScientist
9 years ago

With one of these lowers, and one of these kits: <http://www.e-sarcoinc.com/a...>

you could build a complete stem-to-stern AR for \$460 plus shipping/ffl. Not too shabby for cheap fun-gun.

1 0 Share >



Clint Notestine 9 years ago

ive had a poly lower with at least 500 rds through it with zero trouble and would buy another

1 0 Share >

Ergo 9 years ago

with 500 rounds you haven't broken in the upper much less the lower. I've seen an m16 fall out of a blackhawk with no ill effect on the rifle. I've also seen a poly lower break when the rifle fell 4 feet off a shooting bench on to concrete.

The difference in cost between a poly lower and a forged lower is less than the cost of ammo for two 30 round magazines. Please don't be that guy.

If you need help finding a vendor for an inexpensive forged lower i'll be happy to send you a few links.

1 0 Share >



jesse 9 years ago

not to say you could get a mil spec aluminum anderson stripped lower for around 65 to 70 bucks. a good source for ar parts is www.arpartsfinder.com

0 0 Share >



MattW 9 years ago

Both video tests are great and show they are structurally strong, but I would like to see actual use testing. Hanging weights on it doesn't prove the durability after hundreds or thousands of impacts from the action cycling. As Luke said in an earlier comment, his broke at the buffer tube after cycling 100 rounds.

1 0 Share >

I thought the weak points of the poly AR lower were the pivot and take down pins and their detent plungers and springs? Recoil flexing and "disengagement of the sear" were also cited. Geoff Who is a curious fellow.

1 0 Share



Ergo + → Geoff a well known Skeptic

9 years ago

— ↗

most of them tend to fail at the buffer tube. Some spit at the front of the magwell. I've never seen the recoil flexing you describe. Then again i've never seen a poly lower survive moderate use.

2 0 Share



JDilger +

9 years ago

— ↗

I have been in the military for 14 years and I have been a certified gunsmith for 8 years. I have fired more M4s and M16s than I care to think about. I received an OMNI Hybrid AR-15 for my birthday a couple of days ago and immediately identified an issue. There is far too much play in the magazine well even with the provided ATI Magazine. In order to have it cycle properly I had to swap out the lower completely with one I had on hand. Now it fires with no problems.

0 0 Share



PJ private jones

9 years ago

— ↗

does anyone know where I can get one of these?

0 0 Share



Shane Dale +

9 years ago

— ↗

The ATI OMNI HYBRID is available currently on our website:
<http://www.americantactical...>

0 0 Share



SS SLC Shooter McGavin

9 years ago

— ↗

So I'm the only one excited about this? I emailed ATI with a similar recommendation based on reinforcing weak points. Fiberglass/Poly can be a lot stronger than steel if done right. You also have to account for forgiveness that metal doesn't accommodate. Metal bends, while polymer can bounce back. If this addressed the weak points adequately, I'd pay \$50 for one? This is the future of the AR Lower.

0 0 Share



geeknik

9 years ago

— ↗

I bet if they removed the cardboard and the rubber mat and placed the lower on bare concrete, the forklift would crush it.

0 0 Share



MN Mark N.

9 years ago

— ↗

This whole AR business always has me confused--so many vendors, so few methods of checking them against each other. Being in California doesn't help. I have yet to buy an AR, but am considering doing so before the Legislature takes the choice away. As I understand it, this is what is called a "stripped lower," and that it has to be transferred through an FFL. Correct? \$50 seems pretty cheap to me; how does EP Armory justify charging \$100 for an 80% all polymer lower? And where are these \$70 aluminum lowers? When I've dropped by the local LGS, it seemed I was always looking at \$300, not including fees and tax. Further, the browsing I've done turns up any number of uppers, usually running \$600 and up. And how on earth do some manufacturers charge thousands? are they really that much better?

0 0 Share



Jesse → Mark N.

9 years ago

— ↗

look on arpartsfinder.com. i got an anderson stripped milspec aluminum lower there for under 70 bucks

0 0 Share



S Sterling

9 years ago

— ↗

Very nice, Not too fond of the trigger guard shape, but it looks like ATI addressed the weaknesses of the older poly lowers and will have a lower that will work perfectly fine for

0 0 Share



JT
9 years ago

So I guess AR-15's are now the Glocks of the rifle world? At least you'll be able to put one together for a few hundred instead of nearly \$1000. At least this is more optimistic than look at it like they're selling sawdust bread when there isn't a food shortage

0 0 Share



BryanS JT

9 years ago

Before the last great scare, I put together one for a few hundred. maybe \$500 all said and done?

2 0 Share



Ergo JT

9 years ago

If you think you have to spend a grand to put an ar together your doing it wrong. I just put together a 20 inch rig last month. Total cost was around 750 and that included 60 bucks to get the lo pro gas block pinned. Shop smart, scour deal sights and an excellent rifle can be put together for around 650 bucks.

1 0 Share



JT Ergo

9 years ago

I put my first one together in the late 90's for like 650 and I think that included magazines. The one thing I'll never be able to understand is people who go into Gun stores and buy generic DI AR's for 1200 dollars. I saw it plenty actually in Hawaii where sportsmen seem to worship gun store owners or something

1 0 Share



Ergo JT

9 years ago

a bare bone new colt now sells for 950. Why anyone would pay more than that for an off the rack m4 clone is beyond me. Maybe they are the same people that buy cars without reading the kelly blue book.

1 0 Share

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Interview with Tiffany Piper: National Champion Junior pistol shooter

Posted November 4, 2013 in [News](#) by [Chris Cheng](#) with [8 Comments](#)

Tags: [Bianchi](#), [Chris Cheng](#), [Leupold](#), [Tiffany Piper](#), [Top Shot](#)





Tiffany Piper accepting the 2013 Bianchi Cup Junior National Championship title. At left, MidwayUSA Founder and CEO Larry Potterfield.

Tiffany Piper is an accomplished junior NRA action pistol shooter, hailing from New Zealand as a four-time National Champion. Piper is sponsored by Leupold & Stevens, Inc. and travels the world shooting competitively. When Piper isn't shooting, she's horse riding, motorcross bike riding, and studying criminology at the Auckland University of Technology. She has recently broken two New Zealand records in the same day.

Hi Tiffany, so you're an accomplished 19 year old shooter from New Zealand, good stuff. And you're also sponsored by Leupold, as am I. We have good taste! If I had a bottle of champagne, I'd crack it open to celebrate.

Except I'm not old enough in America!

Oh right, sorry about that. Well then, tell me a little bit about gun culture in New Zealand, how easy or hard is it for civilians to own firearms?

NZ is very strict on gun laws, guns aren't advertised or talked about much on TV, it's sort of hush hush. But there's a big hunting community and so guns are more common in that part of our culture.

In Auckland, the most populous city in New Zealand, there are strict times for shooting, I can only shoot three times per week at my home range (Auckland Pistol Club). Since I'm right in the city where we only have outdoor ranges, there's a noise control issue. I can shoot Wednesday, Saturday and Sunday, but Wednesday I'm at work and university. I shoot on Sundays, but due to gun club scheduling conflicts, there's only a four hour window for me to practice. So I basically only practice on Sunday. If I have conflicts, then sometimes I'll shoot on Saturdays. Saturdays are normally allocated to my horse.

Hours may vary depending on the season, hours may lengthen or shorten. If you're in the middle of nowhere, and your neighbors are OK with guns then you can shoot 24/7 whenever you like.



If you only have three hours per week for live fire, then how else do you practice? Dry-fire, etc?

In my garage I have a small plate rack with 2" plates where I can practice with my air pistol. On average, I shoot it maybe an hour and a half a week.

I do a lot of strength training with CrossFit, to build up my "guns" (Tiffany flexes biceps), if you will. CrossFit encompasses a lot of disciplines from other sports and exercises. It helps me with my breathing since you have to a lot of reps and sets, and I have to maintain breathing control. It has helped me go prone much faster, and my weak-hand shooting has vastly improved.

I used to run up a flight of stairs and get winded, but now I'm barely phased!



What does IPSC and competitive shooting sports look like in your home country?

At my club, IPSC is huge. It's a conflict at the gun club since the IPSC people need more space. I haven't been to a proper match in New Zealand yet due to other conflicts, but I'm hoping to shoot one soon. On any given Sunday, we have six stages with around sixty shooters.

We have steel challenge matches in New Zealand too, which consist of many fast steel matches similar to IPSC, but they are so much FUN!

What initially got you into firearms? I understand you started shooting air pistol at age ten, what do you remember about that experience and the transition from air pistol to firearms?

I probably shouldn't be saying this, but I basically grew up shooting. I was born and carried into a gun club, and after my Dad would shoot he'd come see my Mum and me in the clubhouse. My Dad would take me to the club often, and I shoot because of him. My brother, sister, and Mum all shot for a little bit as well.

Because I was brought up shooting, my Dad would often let me sneak a few shots from his real guns. I don't really remember the transition much since it seemed so natural. My Dad purchased a custom .22LR pistol from a friend. It had a scope and a shroud, and that's about all I can remember since it was almost ten years ago!

Tell us the good stuff. What kind of pistols and gear do you use?

I have a Safariland Bianchi Hemisphere holster, a JR holster for my IPSC gun, my production gun is an STI GP6C in 9mm, 4 1/4" barrel, factory sights, completely original (production gun), grip tape on the grip, a Springfield 1911 is my open gun .38 super, Kart 6" barrel, 2.2lbs Zidecki trigger, a Don Golembieski shroud, Piper 5-port comp, Protocol magwell extension and Piper base pad, Leupold scope, STI s7 sear, and Acurails. The gun was custom built by Rodon Arms by Robbie Donaldson. I use my Dad's STI 2011, Kart barrel, Caspian slide, STI hammer and sear, custom Piper base pad, 6" barrel with custom barrel weight, factory rear sights, front sight by Rodon Arms, What-Ya-Say custom ear plugs, NYX glasses, and Pro Grip hand liquid.



I've also got a Beretta O/U shotgun, 12 gauge, factory stock, 20" barrel which I haven't shot too much, and I also have an AR-15 .223, 16" barrel, which Dad might switch to a 20" match grade Bushmaster barrel.

Who are the shooters you look up to, and why?

Vera Koo, she's the one who got me into Bianchi Cup. She's 67 and broke her leg after tripping over a high rope, and she dragged herself on the ground to get to her car to get her phone and call for help. She's really strong willed, has been shooting for years, and is still going strong. She's incredible, I want to be just like her.

If you could be an animal, what would it be and why?

A horse. I'm obsessed with them, ever since I was little. I'm one of those crazy horse girls who would. There's something about them, they are elegant, when you watch them run, they look so free, and carefree. There's a wild side which I love, they are free to roam. They are family oriented as well.

What are some of your primary goals as an action pistol shooter?

Right. Now this is huge. I want to hopefully be as big as Jessie Duff. I want to have my own TV show. I want to teach young people about the shooting sport. I don't want it to be a dying sport, and so we have to invest in our youth. I want to educate people so people aren't as scared of guns as them.

I'm studying criminology and so maybe I'll be in law enforcement, criminal law, or forensic science.

I've contemplated the Army, something where I can work with guns and help people. Travel competitively, perhaps have it as a career. I want to be the face of shooting. Is that a pretty big dream?

That's an awesome dream, don't let anyone get in your way! So what is one of your shooting strengths, and one of your weaknesses? How are you addressing that weakness?

One of my weaknesses was my weak hand shooting. Pursuing Crossfit was my solution. my Dad is my coach and one thing he made me do was repeating the basics, my breathing, my holster work, and he wouldn't let me stop until I had perfected things. My Dad has always taught me that whenever you have a problem to strip it down to its basics and tackle things one bit at a time.

On my 1911, I realized that when I would draw to track a moving target, that I would get my sight picture and only then would I turn the safety off. I am still practicing consistently turning the safety off as I am bringing the gun up to target.

Have the junior divisions changed at all over the past nine years you've been involved? Are more juniors getting involved, or is it an area we as a community need to keep promoting?

No matter how many juniors are getting involved, we need to continue promoting it. There are a lot of kids who aren't into mainstream sports like rugby, soccer, etc. and so we see people doing a lot of archery

In America, junior numbers have definitely grown. In New Zealand, it's dying, and it's really sad. This is my last year and so there's only two junior shooters left. When you are in a country that is very anti-guns, you can't promote the sport since the government won't allow it. Our views on guns have been tainted, and no one wants to give it a chance. People hear guns and they freak out. We don't have conceal carry, most of our police don't carry guns, but they have tasers.

People see American news and New Zealanders freak out since it's all about gun violence. And it's all really about people killing people, not guns killing people.



Vegemite. Love it or hate it?

Vegemite is actually Australian! It's made of meat extract. Marmite is made of yeast extract. It's more mild and less salty than Vegemite. I love it. Two or three years ago, we had some major earthquakes here and the Marmite factory was affected. I went without Marmite for almost a year, and it was tough. When I was little I used to eat Marmite by the spoonful!

Ha! I've tried Vegemite and Marmite a few times, and simply can't stomach it. But anyway, to wrap things up, is there anything else you'd like to mention?

I do want to branch out into other shooting disciplines like 3-gun and shotgun shooting. My Dad doesn't like me shotgun shooting because 1) I absolutely kick his ass at it and 2) I get really bad bruises and people criticize me saying I'm not holding the gun right, but I just have really boney shoulders.

Steel Challenge is another interest of mine. My gunsmith is building a new gun for me.

Thanks for your time Tiffany. Best of luck to you, we here at TFB are excited to keep tabs on your future success!



Chris Cheng

Chris Cheng is History Channel's [Top Shot Season 4 champion](#) and author of "Shoot to Win," a book for beginning shooters. A self-taught amateur turned pro through his Top Shot win, Cheng very much still considers himself an amateur who parachuted into this new career.

He is a professional marksman for [Bass Pro Shops](#) who shares his thoughts and experiences from the perspective of a newbie to the shooting community. He resides in San Francisco, CA and works in Silicon Valley.

www.TopShotChris.com.

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The homepage of TheFirearmBlog.com. On the left, there is a newsletter sign-up form with fields for "Enter your email..." and a "SUBMIT" button. To the right of the form is a large banner with the text "A PERFECT FIT FOR EVERY DAY" in bold letters, accompanied by images of various firearms. Below the banner are links for "FIND A DEALER", "GLOCK M16", and "GLOCK M48". At the bottom of the page, there is a footer bar with links for "As Seen In", "Contact", "About", "Newsletter", "Copyright Policy", "Privacy Policy", "Terms of Use", and the copyright notice "© 2023 TheFirearmBlog.com".

RE: New polymer receivers

Shel Jones <sjones@gwacsdefense.com>

Wed 2/18/2015 9:01 PM

To: Russell Phagan <sinistralrifleman@hotmail.com>

Hmmmm they look pretty good.

Shel

-----Original Message-----

From: Russell Phagan [mailto:sinistralrifleman@hotmail.com]

Sent: Tuesday, February 17, 2015 9:44 PM

To: Shel Jones

Subject: New polymer receivers

A new hybrid design:

<http://kaiserus.com>

Sent from my iPad

8:28

R-SH Document 274-4 Filed in USDC ND/OK
of 256

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May 4, 2012 ·

...

Check out this blog speaking to the history and quality of the CAV-15 MKII.

<http://sinistrarlifeman.com/2012/04/06/cav-15-polymer-lower-receivers/>



SINISTRALRIFLEMAN.COM

CAV-15 Polymer Lower Receivers

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Gwacs Armory LLC is with Damon Robinson ***
Sr. and 4 others.

Dec 11, 2012 ·

Same design, same material, same processes, CAV15
Lower receiver is durable and tough. Which is why we
back it with one of the best warranties in the business.
For the next 30 days type tactical in the discount code at
check out and get 10% off at our web store.

www.gwacsarmory.com

← OVER **50,000** ROUNDS →

of .223, 45ACP and 9mm have been fired through uppers mounted on this receiver



CAVALRY ARMS RECEIVERS | DESIGNED TO ENDURE

Available in Black, Green, Coyote Brown, Pink and Blue from cavalryarms.com

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Jan 26, 2013 ·

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NEW ADDITION TO THE GWACS ARMORY TEAM:

We are proud to announce our newest member of the GWACS Armory Team, Chris Collins.

Chris brings an extensive amount of real world experience and training to the GWACS Armory team, and will be an excellent contributor with our new products coming out this summer! You can expect to see Chris around at different events and competitions around the country sporting the GWACS Armory CAV-15 MK II.

Chris is a Marine who served with the Marine Corps. 3rd FAST Company (Fleet Antiterrorism Security Team) and with the Weapons Company, 2nd Battalion, 8th Marine Regiment, 2nd Marine Division from 2004-2009. Chris has been an Instructor with United States Shooting Academy since 2009 and serves as the Director of Training with NextLevel Training. Chris is also the Director of Education for the Association of Defensive Shooting Instructors.

A lot of you may recognize Chris from his role on the best season yet of History Channels "Top Shot"; check out the video on the link below!

Please show your support for Chris and his next incredible journey by clicking the Like on our Page and



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9+



1



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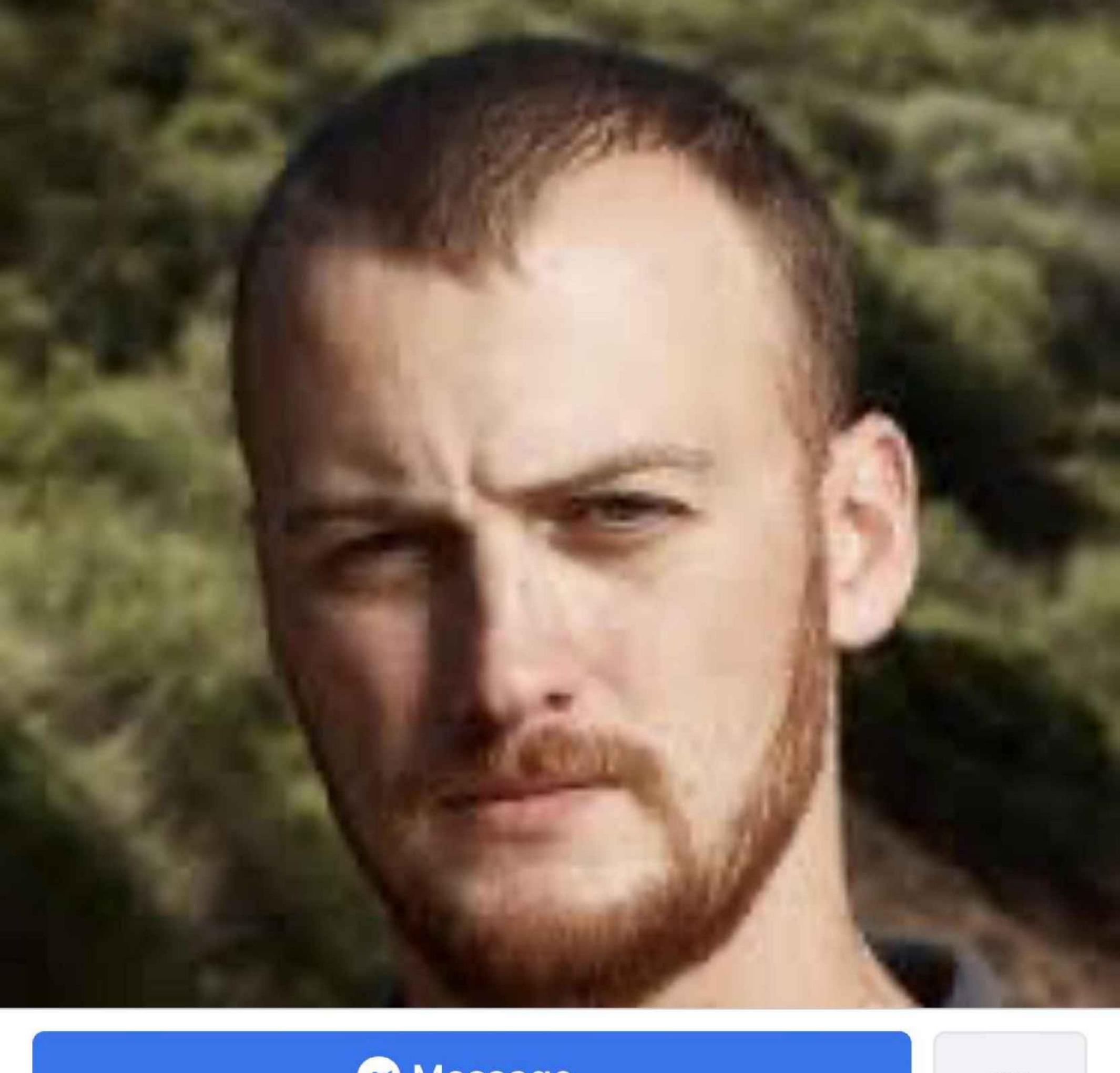
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A lot of you may recognize Chris from his role on the best season yet of History Channels "Top Shot"; check out the video on the link below!

Please show your support for Chris and his next incredible journey by clicking the Like on our Page and Share this Post with all your friends! Exciting times with GWACS Armory!!!

<http://www.history.com/shows/top-shot/videos/playlists/season-3-bios#meet-chris>

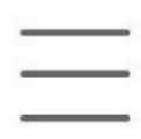


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Jan 31, 2013 ·

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LIFETIME WARRANTY

Did you know the GWACS Armory CAV-15 MK II includes a Lifetime Warranty? Well it sure does, and if you read this article by SinistralRifleman (CAV-15 Expert) you will understand exactly how tough the CAV-15 MK II is and why we stand behind our product with the best in the industry warranty!

OVER 10,000 ROUNDS
of .223, 45ACP and 9mm have been fired through uppers mounted on this receiver.

CAVALRY ARMS RECEIVERS | DESIGNED TO ENDURE

[SINISTRALRIFLEMAN.COM](#)[CAV-15 Polymer Lower Receivers](#)

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Aug 28, 2013 ·

GWACS sponsored shooter Russell Phagan of SinistralRifleman.com demonstrates shooting techniques with his GWACS Armory CAV-15 MKII at his Practical/Defensive Carbine 1 Course



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SAT, OCT 5, 2013

Rifle Pistol Competition Skills Clinic

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Sep 24, 2013 ·

SAT, NOV 9, 2013

CAV-15 MKII Lower Receiver Armorer Class -
Tempe AZ

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Gwacs Armory LLC is with Jeremy Cole.

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Sep 19, 2013 ·

Wow, 4.5 lb AR15. Mr. Moore provided us this picture of his custom built AR15 featuring our CAV-15 MKII single



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October 9, 2013 ·

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Here is a recent post from one of our certified GWACS Armory CAV-15 Expert. Our CAV-15 MKII has a lifetime warranty because it will last!

...





Russell Phagan Gwacs Armory LLC

October 4, 2013 ·

All polymer receivers are not created equal. A polymer receiver with the same dimensions as an aluminum receiver is destined to fail.

Unlike the receiver pictured here, The GWACS Armory CAV-15 MKII is the only receiver on the market designed from the ground up to be made out of polymer.

Over the years my CAV-15s have seen thousands of rounds hard use, and even abuse and keep working!



97

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Author

Gwacs Armory LLC

Brandon Metcalf we agree...your SCAR is not going to have this issue nor will our CAV-15 AR15 lower receiver.

[Like](#) · [Reply](#) · 8y



Russell Phagan

Josh, all polymer receiver that are made to mirror the dimensions of an aluminum receiver will fail at the weakest point. Making it capable of accepting a threaded telestock tube does not leave enough plastic material to stand up to even moderate use.... [See more](#)

[Like](#) · [Reply](#) · 8y



Russell Phagan

All traditional direct impingement upper receivers require the use of buffers and spring in the buffer tube. The same is true of most gas piston uppers as well.



Like · Reply · 8y

Joseph E Martin

I would rather not have a polymer lower. They seem to be a bit weak.

Like · Reply · 8y

Brandon Metcalf

Do all AR15s require buffer springs in the stock or are there models that don't? I want one

Like · Reply · 8y

Brandon Metcalf

My SCAR will likely never have this issue.

Like · Reply · 8y

Tim Mooney

I could see that happen if the "mortar method" was required to clear a jam.

Like · Reply · 8y

Dennis Carter

It needs an accu-grip! www.accu-grip.net

ACCU-GRIP.NET

ACCU-GRIP

Like · Reply · 8y

Josh Harrington

i wonder how the end piece broke

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Most Relevant is selected, so some comments may have been filtered out.

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November 11 at 7:42 AM ·

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Rodney Peters
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Gwacs Armory LLC
October 27 at 5:34 PM ·

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Rodney Peters

What is going on now? loved the product back in the day
😊 still have this 6lb magic wand 😊



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November 5, 2020 ·

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Author

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May 13, 2014 ·

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Check out this CAV-15 MKII build from jerkingthetrigger





Jerking the Trigger

May 13, 2014 ·

This build has been made lighter and lighter over the years. It weighs 6.26 lb as pictured. I could go lighter pretty easily but there are things I don't want to compromise. For instance, I am using a BCM GUNFIGHTER Charging Handle but I could go with something lighter. I could go with a shorter rail. I could go with a lighter BCG or buffer (currently using a BCM BCG and H buffer). I could drop the iron sights like many ultralight builders or swap the LaRue mount for a lighter, non-QD mount. However, these are all items I don't want to compromise and things like hand stops are far more useful than their fraction of an weight would indicate. 6.26 lb is pretty good for a carbine with a 12" rail, light, hand stop, Aimpoint, and back up iron sights. #lightweightar15 #ar15 #triggerjerk #jerkingthetrigger #igmilitia #gundaily1 #weaponsdaily

55

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Marcus Reagan

is this a 7.62x39 ?



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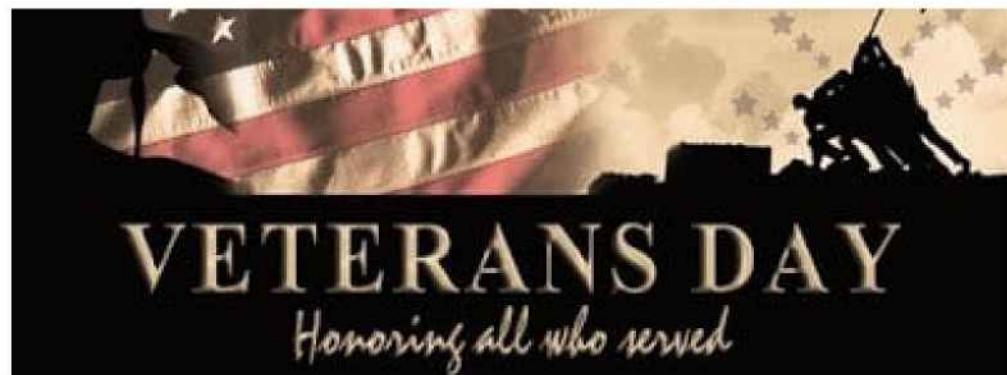
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Feb 19, 2015 · 10 photos

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Throwback Thursday.

Russell at the MGM Ironman 3 Gun Match 2002 with a CAV-15 MKI Generation 3 receiver. This one has been shortened to A1 length vs the original 14.5" LOP of the MKI. The popularity of the shortening mod resulted in the CAV-15 MKII (current production) being made A1 length (13" LOP).



14



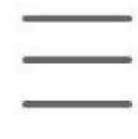
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Jul 21, 2015 ·

6lb AR15 build with the CAV-15 as the foundation.



JERKINGTHETRIGGER.COM

Challenge Accepted! Lightweight on a Budget Build

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May 13, 2016 ·

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Check out [Echo Nine Three](#) and what they can do to make your CAV-15 even better!



**Echo Nine Three**

April 3, 2016 ·

Q: While your modding my [Gwacs Armory LLC](#) receiver, could you guys install a QD sling adaptor to go with my DMS/QD sling?

A: YES!

15

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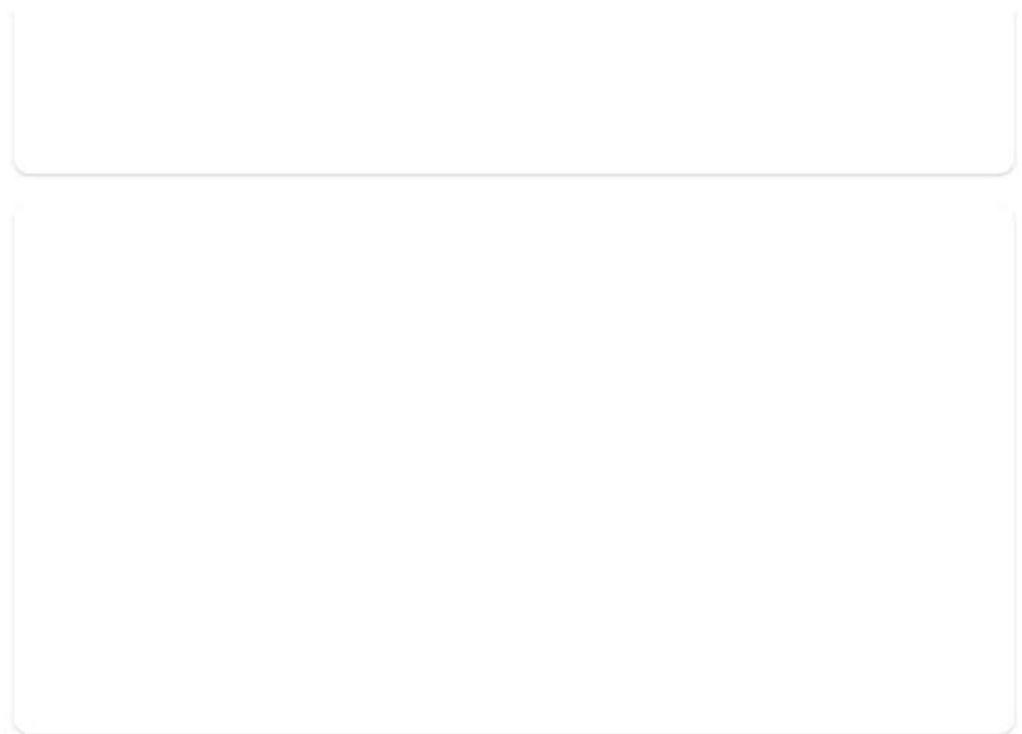
Author

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January 17, 2019 ·

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Interesting developments, we have had to vacate our location. We are in the process of finding new space and will be transferring our FFL license's. We will be off grid until we get set back up.

33

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Buck Rekow

Hello?

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Darren Quintinsson

**Sean Fitzpatrick**Darren Quintinsson KE Arms is making the updated
Mk3 lower[Like](#) · [Reply](#) · 1y

2

[Reply to Darren Quintinsson...](#)**Stephen Richards**Hallelujah gun jesus has saved you all go to brownells
and check out the WWSD 2020. Looks like we still have
to wait till next year but they are going to release a
polymer lower and complete rifle for those who don't
want to build.[Like](#) · [Reply](#) · 1y

7

**Kenneth King**<https://www.youtube.com/watch?v=G6Rd6BKajDo> For
anyone who hasn't seen it.

YOUTUBE.COM

WWSD2020 - Project Launch & Mk3
Lower Announcement

2

[Like](#) · [Reply](#) · 1y**Conor McGowan**<https://youtu.be/G6Rd6BKajDo>

YOUTUBE.COM

WWSD2020 - Project Launch & Mk3
Lower Announcement

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[Like](#) · [Reply](#) · 1y**Joshua Houlden**

Forgotten weapons just posted a video!! Wwsd 2020!!!

3

[Like](#) · [Reply](#) · 1y**Tom Bennett**https://www.reddit.com/.../what_is_the_future_of.../f4pa4si/

REDDIT.COM

"What is the future of the CAV-15
Receiver? Be patient and stay tuned."

2

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[Like](#) · [Reply](#) · 2y



Tom Bennett
Already confirmed a misprint.

[Like](#) · [Reply](#) · 2y



[Reply to Daniel Joseph...](#)



Tom Bennett
<https://www.atf.gov/.../listing-federal-firearms.../state...>

GWACS no longer on the ATF list of FFL's in Oklahoma



ATF.GOV

State Federal Firearms Listings |
Bureau of Alcohol, Tobacco, Firear...

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Shawn Lucas
It's over, been over for a while. Dam shame too. 😢



[Like](#) · [Reply](#) · 2y



Sean Fitzpatrick
They are currently listed and at a different address than they have here. The Mk-III and Mk-IV lowers are listed in the Brownells catalog, and there has been nothing but speculation stating that stated they were gone. Be patient.



[Like](#) · [Reply](#) · 2y

**Tom Bennett**

Sean Fitzpatrick Brownells confirmed to Russell that the inclusion of Mk2, Mk3, and Mk4 lowers in the catalog is a misprint:

**sinistralrifleman**

Confirmed misprint,
GWACS has been dark
since 2018 with Brownells.



1w 3 likes Reply



1

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Reply to Tom Bennett...

**Joshua Houlden**

Anybody else notice they changed the address on here?
Something might actually be happening guys!!!

Like · Reply · 2y



1

**Tom Bennett**

Has been that address for some time

Like · Reply · 2y



Reply to Joshua Houlden...

**Tom Bennett**

GUYS!!

Look at Sinistral Rifleman's Reddit account - He's been
quietly hinting at something:

<https://www.reddit.com/user/sinistralrifleman...> See more

REDDIT.COM

overview for SinistralRifleman

Like · Reply · 2y · Edited

**Reed Phillips**

Update? Anything?

Like · Reply · 2y



3

**Daniel Sutherland**

Cracked open the Brownells catalog for 2019-2020 and
saw the Mark II, III and IV receivers advertiser yet the
website remains unchanged.

Will we soon see more updates on the website and here?

Like · Reply · 2y



6

**Luis Duprey**

I saw that too. Brownells needs to make it happen!

**Joshua Houlden**

Did the ad have any pictures?? Release date??

Like · Reply · 2y

**Daniel Sutherland**

The ad had a picture of a MKIII Lower with some random upper attached. Nothing about a release date though, just "NEW!" with a selection of each type of lower in either black, OD green and FDE.

Like · Reply · 2y

**Daniel Joseph**

Stateside ally called Brownells. Apparently Discontinued. Someone should call them again to confirm.



Like · Reply · 2y

**Kyle Wolf**

Very excited, hope it pans out.

<https://www.ar15.com/.../GWACS-has-no-lowers.../5-2124685/>

Like · Reply · 2y

**Daniel Sutherland**

Cole Graham My guess it's a different strokes for different folks kind of scenario. I handled an AR with an A2 stock and it wasn't too long for me but that's just one guy



Reply to Daniel Sutherland...

**Marshall Eubanks**

It's really disappointing that this operation seems to have dropped off the earth. This was an excellent product, and the market when the molds wore out was probably as strong as it ever was, thanks to InRange's WWSD project.

My WWSD is fantastic, btw... [See more](#)[Like](#) · [Reply](#) · 2y · Edited**Joshua Houlden**

Soooooooo..... Still nothing?

[Like](#) · [Reply](#) · 2y**Jason Bowen**

Seriously! I'm about to go with an inferior product.... please... someone... stop me!

[Like](#) · [Reply](#) · 2y**Shawn Lucas**

It's been January without so much as a peep from them, I think they are over man.

[Like](#) · [Reply](#) · 2y**Jason Bowen**

Yeah, damn shame if that's the case. Can't be easy having to replace tooling while changing locations all the while people are asking "where's mine?" I'm holding out hope that they'll be back up and running in a few months. They still have a website an... [See more](#)

[Like](#) · [Reply](#) · 2y

Reply to Jason Bowen...

**Kazumasu Takikawa**

Hurry up guys! This is ridiculous!

[Like](#) · [Reply](#) · 2y**Shawn Lucas**

Kazumasu Takikawa it's over my friend

[Like](#) · [Reply](#) · 2y

Reply to Kazumasu Takikawa...

**Andy DeBiasio**

ANY WORD ON MKIII or is the company done and over?

[Like](#) · [Reply](#) · 2y



Like · Reply · 2y



Reply to Andy DeBiasio...



Nick Shane

June 16, 2019 checking in for update on this post from January. Hope all is well and you all haven't suffered the InRange Curse.

Like · Reply · 2y



Shawn Lucas

Nick Shane I have a feeling it's over for them

Like · Reply · 2y



Reply to Nick Shane...



Gregory Allard

What happened with the move its been Months.

Like · Reply · 2y



Gregory Allard

As of "June" the BATFE lists the a Tulsa OK address...

lets hope that means that somethings happening and the person who checks the company face book is Soo busy with shop set up they're not checking the page.... [See more](#)

Like · Reply · 2y · Edited



Reply to Gregory Allard...



Jason Bowen



Like · Reply · 2y



Jason Bowen

C'mon guys! I've got a fever and the cure is a lightweight monolithic polymer lower for my Featherweight build.

Like · Reply · 2y



Joseph Smith

You guys ever make it back?

Like · Reply · 2y



Tom Furrows



media1.tenor.co



Like · Reply · 2y



James Martin

Status update or an ETA?

Like · Reply · 2y



Bryce Goodman

What's the word?

Like · Reply · 2y



Shawn Lucas

It's been crickets for months...

Like · Reply · 2y



Jason Green

https://www.reddit.com/.../what_is_the_future_of_th.../...



REDDIT.COM

"What is the future of the CAV-15 Receiver? Be patient and



Reply to Bryce Goodman...

**Dillon Booker**
could we get an update?

Like · Reply · 2y

**Mason McElroy**
Any updates?

Like · Reply · 2y

**Kurt Jakob**
Any good news?

Like · Reply · 2y

**KarenGarner TreffingerBlair**
Hope you get back up and running soon.

Like · Reply · 2y

**Eric Pearson**
I have these of yours if someone would like to msg me...

Like · Reply · 2y

**Austen Moore**
Like, you're trying to part with them?

Like · Reply · 2y

**Eric Pearson**
Austen Moore ... I had just coated them as demos
for gwacs... but I can do yours if you like

Like · Reply · 2y

**Austen Moore**
Oh I thought you had some to sell lol

Like · Reply · 2y



Reply to Eric Pearson...

**Collin Brasch**
You've been off the grid forever I feel.

Like · Reply · 2y





Reply to Collin Brasch...

**Rodric Fleming**

I hope ya'll are able to find a new place and get back up and running soon.

[Like](#) · [Reply](#) · 2y**Michael Dee Cannady**

Can I buy a few lowers this week?

[Like](#) · [Reply](#) · 2y · Edited**Rodric Fleming**

media1.giphy.com

[Like](#) · [Reply](#) · 2y

Reply to Michael Dee Cannady...

**Will Sarti**

Good luck.

[Like](#) · [Reply](#) · 2y**Jacob RaptorMan Short**

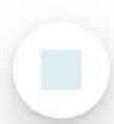
Will CAV mk.3 lowers still be available later this quarter?

[Like](#) · [Reply](#) · 2y**Chris Bozwell**

OTHER PC Moving to Missouri. We appreciate your business.

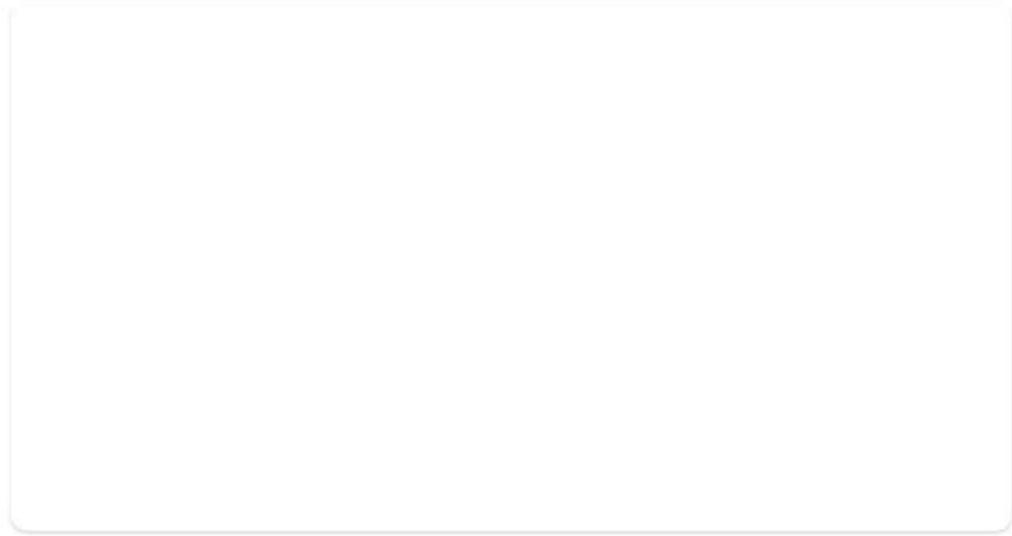
[Like](#) · [Reply](#) · 2y

Most Relevant is selected, so some comments may have been filtered out.









GWACS ARMORY Every Ounce Counts

http://gwacsarmory.com/ 203 captures (9 April 2012 - 5 May 2012)

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We are thankful for inRange TV's WWSD project expanding the interest in the GWACS CAV 15 product. With this expanded interest we have virtually sold out of our MK II product line. This year the CAV-15 MKII turns 15 years old and unfortunately during our last production run our injection mold reached its end of life. We are currently finalizing the design of the CAV-15 MK III that will maintain the same strength and durability as the MK II while including the most requested new features. We have incorporated some features recommended by Russell Phagan aka SinstralRiflenan.com who has been involved with the CAV-15 since 2001. These improvements assure the future CAV-15 models are in line with the needs of the modern firearms market. We will be announcing the availability of the CAV-15 MK III and MK IV later this year! If you want to receive more information as we near the preorder event please create an account on our web page so that you can receive updates. If you already have an account you will be notified by email. We want to thank everyone for the enormous support of the GWACS Armory CAV-15 MK II.

GWACS Armory CAV-15

Multiple Colors

Waiting for web.archive.org

**F-1 FIREARMS AR-15/M16
BDR-15 RECEIVER SET**Looks Unlike Any Other Lower Out
There - Strong & Reliable

Who says all AR-15 receivers have to look alike? F-1 rethought the whole design from the ground up, got rid of a bunch of extra metal - and weight! - without sacrificing strength. Hand-finished for perfect fit to help you wing out every last MOA of accuracy. Oversized triggerguard, 60° beveled magwell, plus pivot/takedown pins installed. Includes adjustment screws for bolt catch, receiver tensioning, take-down pin detent and trigger for a tight custom fit. Matte black hard-anodized finish. **FFL required for purchase.**

#100-020-541AV AR-15 Skeletonized Receiver Set, 7B498N00 . . . \$ 525.00

**FM PRODUCTS AR-15
FM-9 RTC 9MM LOWER RECEIVER**At Last! A Truly Dedicated 9mm
Lower With Enhanced Features

The FM-9 Ready-to-Customize 9mm Lower Receiver is designed from the ground up specifically for 9mm AR-15 conversions. It's NOT just a standard AR-15 receiver with just a smaller mag-well, but a purpose-built lower with many enhancements just for pistol caliber AR shooters. It uses Glock® pistol magazines, which are extremely reliable and readily available (especially if you already own a 9mm Glock® or two). And the FM-9 lets you carry TWO mags on the gun - one in the magwell and a backup stored in the pistol grip. That next reload is always right under your hand! The release button to drop the reserve mag is positioned exactly where you find the button on a Glock® pistol. FM Products manufactures the FM-9 RTC from firearm-grade reinforced molded polymer with a 7075 T6 aluminum insert that supports the stress points. It's so strong the buffer tube attachment point will support 1,600 lbs! The molded polymer construction allows for a unique external shape with enhanced ergonomics that make the FM-9 extremely comfortable - and intuitive - to operate. Integral triggerguard adds structural strength. Oversized triggerguard eases operation when wearing gloves. Bolt stays open after last round. Titanium hammer, trigger, pivot and takedown pins. The FM-9 9mm lower is totally ambidextrous. The safety selector, bolt release, primary mag release, and even the reserve mag release ALL have ambidextrous controls. The FM-9 comes with all of these controls installed; you just add the trigger group and receiver extension / 9mm buffer / stock of your choice. Recommended triggers: FM Products GI Style AR-15 Trigger Group (#100-026-159) or Match Grade Competition Trigger Group (#100-026-160), both available separately. **FFL required for purchase.**

#100-026-162AV FM-9 RTC Lower Rec'r, 6D143D99 . . \$ 143.99

**JAMES MADISON TACTICAL AR-15/AR-308
80% POLYMER GEN2 LOWER RECEIVER**Complete The Lower For Your Next
Build At Home

Made of tough, reinforced polymer, this lower comes 80% complete, with the necessary jig and instructions for final machining into a finished AR lower. Because it is incomplete, an FFL is not required for purchase. Reinforced areas around magwell, bolt release, and interface points with upper receiver give added strength and durability. Built-in triggerguard simplifies assembly and enhances structural strength. **AR-15** - threads for buffer tube, bolt release cavity, and rear pivot pin hole accept standard mil-spec AR-15 parts. **AR-308** accepts components that fit a DPMS LR-308 lower. *May not be returned to Brownells once modified in any way.*

#100-014-622AV AR-15 80% Lower Rec'r, 6B885A74 . . \$ 97.99
#100-017-979AV AR-308 80% Lower Rec'r, 6B119C73 . . 145.99

Orders: 800-741-0015

NEW!**FM PRODUCTS AR-15
9MM BILLET LOWER RECEIVERS**Take Your PCC Build to the
Next Level in Looks AND
Performance

Designed to give you greater latitude in customization, these FM-9 Lower Receivers are an ideal base for your next pistol caliber build. Machined from 7075 T6 aluminum, with mil-spec hardcoat anodizing, these premium lower receivers come with FM's proprietary last-round bolt-hold open, a stainless steel recoil spring, and full compatibility with 9mm Glock®-style magazines. The **Pistol Lower** includes lower parts kit with no MIM parts, GI trigger group, and a 0.5 oz. heavy buffer. **Rifle Lower** adds to the Pistol lower's features a 6-position mil-spec M4 carbine buffer tube ready for the carbine stock of your choice. **Premium Pistol Lower** boasts an FM Products trigger group made from A2 tool steel with a nickel Teflon coating, adjustable proprietary trigger, 1.12" O.D. pistol-type buffer tube, ambidextrous safety, 6.5 oz. heavy buffer with Tungsten weights, and QD end plate. **Premium Rifle Lower** also has an FM trigger group with A2 tool steel contact parts with a nickel Teflon coating, adjustable proprietary trigger, ambidextrous safety, 6-position, mil-spec carbine buffer tube, 8 oz. heavy buffer with Tungsten weights, and an endplate with QD sling swivel socket.

#100-035-372AV	FM-9 Complete Pistol Lower Receiver, 6D199D00 . .	\$ 199.00
#100-035-373AV	FM-9 Complete Rifle Lower Receiver, 6D199N00 . .	199.00
#100-035-374AV	FM-9 Premium Pistol Lower Receiver, 6D299G00 . .	299.00
#100-035-375AV	FM-9 Premium Rifle Lower Receiver, 6D299I00 . .	299.00
#100-027-987AV	Stripped FM-9 Billet Lower Receiver, 6D159D00 . .	159.00

NEW!**GWACS ARMORY AR-15
CAV-15 POLYMER LOWER
RECEIVER**As Strong as Aluminum
With Less Weight

The CAV-15 polymer lower is constructed of two pieces of injection molded polymer that are friction welded together for incredible strength. As its designation indicates, it is based on - but much improved upon - the old Cav Arms polymer lower, much missed by folks who like to keep their ARs lightweight. Since since the lower receiver, fixed stock, pistol grip, trigger guard, and buffer tube are all formed into one solid unit, there are no weak points for fracturing like on traditional aluminum lowers. Works with standard AR-15 parts. Comfortable pistol grip has light pebbled texturing and a subtle shelf for parking your thumb. Large integrated triggerguard for gloved hand operation. **MKII Stripped Lower** has an integral A1-length fixed stock. **MKIII Lower** is based on the M16A2 platform and adds to the MKII's feature set multiple QD sling swivel sockets and internal fluting in the buffer tube that helps clear debris when working in a dusty/dirty environment. **MKV Lower** comes with an eight position adjustable stock, plus integrated single point sling mount. All available in Black (BLK), Flat Dark Earth (FDE), and O.D. Green (ODG).

#100-035-589AV	CAV-15 MKII Lower, BLK, 1G127L20 . .	\$ 139.00
#100-035-590AV	CAV-15 MKII Lower, FDE, 1G127N20 . .	139.00
#100-035-591AV	CAV-15 MKII Lower, ODG, 1G127J20 . .	139.00
#100-035-595AV	CAV-15 MKIII Lower, BLK, 1G127L20 . .	139.00
#100-035-596AV	CAV-15 MKIII Lower, FDE, 1G127K20 . .	139.00
#100-035-597AV	CAV-15 MK III Lower, ODG, 1G127B20 . .	139.00

NEW!**KNIGHT'S ARMAMENT AR-15/AR-308
SR-15/SR-30 LOWER RECEIVERS**All The Elements for Constructing
Your Next Go-To Rifle

Purpose-built to be the perfect starting point for a high-quality rifle, Knight's IWS lower receiver is loaded with some of the best features available in today's AR world. Forged from 7075 T6 aluminum, with a heavy-duty hardcoat anodized finish, this lower is built to last! Fully ambidextrous safety selector, magazine release, and bolt release, plus a 4.5 lb. two-stage match trigger. Each lower comes with an LMT SOPMOD stock. The **SR-15 Complete Lower** is caliber-marked for 5.56 NATO and includes a six-position buffer tube. **SR-15 Stripped Lower** is designed to accept all standard mil-spec lower parts kits. This lower is not ambidextrous. The **SR-30 Complete Lower Receiver** is caliber-marked for .300 AAC Blackout.

#100-027-982AV	SR-15 Complete Lower Rec'r, 4C856J99 . .	\$ 856.99
#100-027-983AV	SR-30 Complete Lower Rec'r, 4C00HKL . .	856.99
#100-030-465AV	SR-15 Stripped Lower Rec'r, 4C210P00 . .	210.00

NEW!**LEWIS MACHINE & TOOL (LMT) AR-308
MWS LOWER RECEIVER**A Great Starting Point For
Your Next AR-Style .308 Build

With the 308 MWS lower receiver you get a solid foundation for a building a rifle in .308 Winchester, 6.5 Creedmoor, or other calibers compatible with a 7.62x51 lower receiver. Forged from 7075 T6 aluminum, with a heavy-duty hardcoat anodized finish for long lasting wear resistance. It has cutouts for the LMT ambidextrous magazine release, and holes for mil-spec 154° trigger pins. Pictograph "Safe" and "Fire" symbols are engraved on both sides to accommodate ambidextrous safeties. The 308 MWS lower comes with LMT's two-stage trigger group, ergonomically textured pistol grip, QD socket endplate, and SOPMOD buttstock. This is an SR-25 pattern lower receiver, compatible with LMT and Knight's Armament upper receivers. Will not work with DPMS pattern upper receivers.

#100-030-182AV	MWS Stripped Lower Rec'r, 4A399E00 . .	\$ 399.00
#100-030-183AV	MWS Complete Lower Rec'r, 4A899Q00 . .	899.00

AR-15/M16

LOWER RECEIVERS

**MATRIX ARMS AR-15
80% LOWER RECEIVER**An AR Lower Shipped Straight
to Your Front Door

The Matrix Arms 80% Forged AR-15 Lower Receiver takes the DIY AR build to the next level for the dedicated AR owner, giving them the chance to machine out the interior pocket themselves for the ultimate AR project. Includes all of the exterior machining done for you and only needs the interior pocket for the hammer and trigger machined in order to make it a fully functioning lower.

Forged from 7075-T6 aluminum, available **Unfinished** or with matte black **Hardcoat Anodized** finish. Tools needed: mill/drill, $\frac{1}{8}$ " drill, $\frac{3}{16}$ " drill, $\frac{1}{4}$ " end mill, X-acto knife or similar tool. Use Anderson Manufacturing jib (#100-016-684, sold separately). Does not have to be shipped to an FFL dealer. Stripped with "S & F" on both sides. Matrix's 80% lower also features a take-down lug pocket and is a great way to take on an advanced AR build. *May not be returned if receiver is altered in any way.*

#100-025-580AV	80% Lower Rec'r, Anodized, 9D40A72 . .	\$ 49.85
#100-025-581AV	80% Lower Rec'r, Unfinished, 9D40A60 . .	46.85

**POLYMER80 AR-15/M16
80% POLYMER LOWER RECEIVER
& JIG KIT**No Expensive Jig Or Extra Parts
To Purchase

Receiver kit everything needed to start your next build. Lower receiver is constructed from a single block of proprietary polymer composite with a solid core design, stiffened magwell and beefier buffer tube housing. These lower receivers are 80% finished and require final milling of the fire control group, trigger pin, hammer pin, trigger slot, and safety selector. The included jig system provides an insert for trigger hole drilling, and also includes the necessary drill bits plus end mill bit to finish your lower. Because the receiver is incomplete, an FFL is not required for purchase. *May not be returned to Brownells once modified in any way.*

SPECS: Nylon polymer, black. Jig - Polymer, red. Includes bits and Allen wrench.	
#100-016-996AV	80% Polymer Lower Receiver & Jig Kit, 9D59K39 . .

\$ 77.99

BROWNELLS PAGE 9

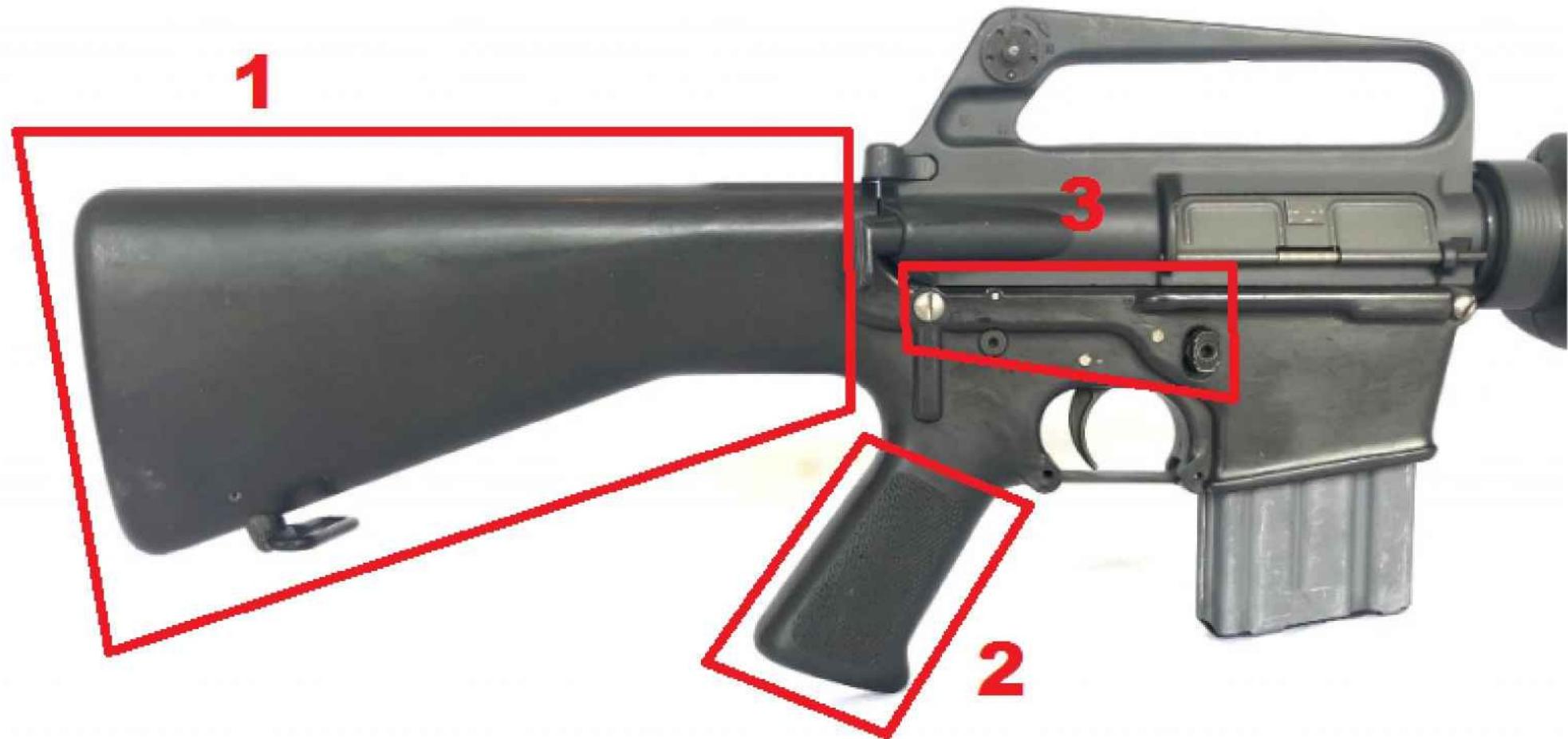
Armory-0020



KEA002533

Colt 1970s Polymer Receiver

- 1) Integral stock and buffer tube**
- 2) Integral pistol grip**
- 3) Reinforced fire control area**





KEA002535







KEA002538





KEA002540



KEA002541



KEA002542







KEA002545



KEA002546











KEA002551





KEA002553





KEA002555

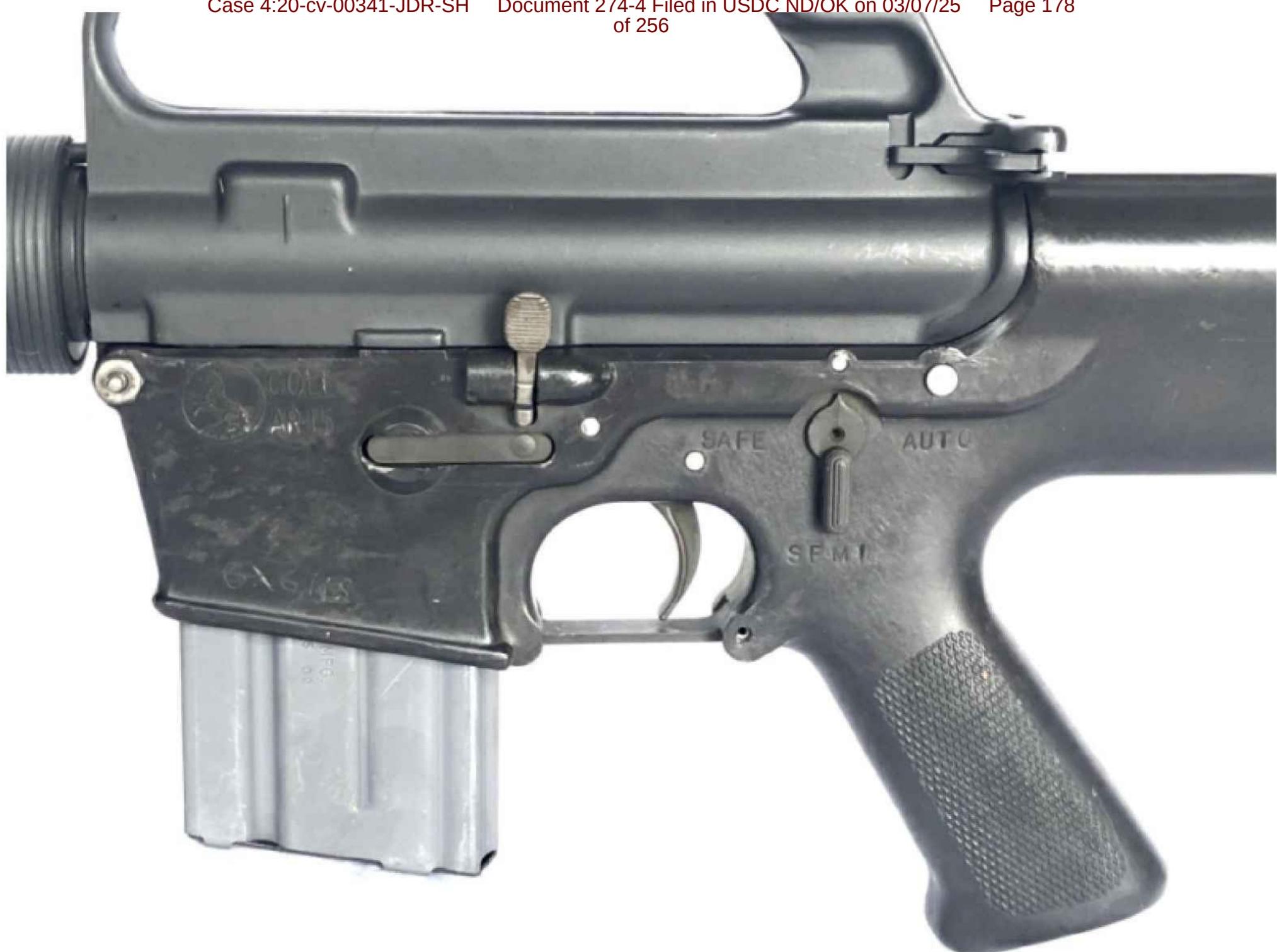


KEA002556











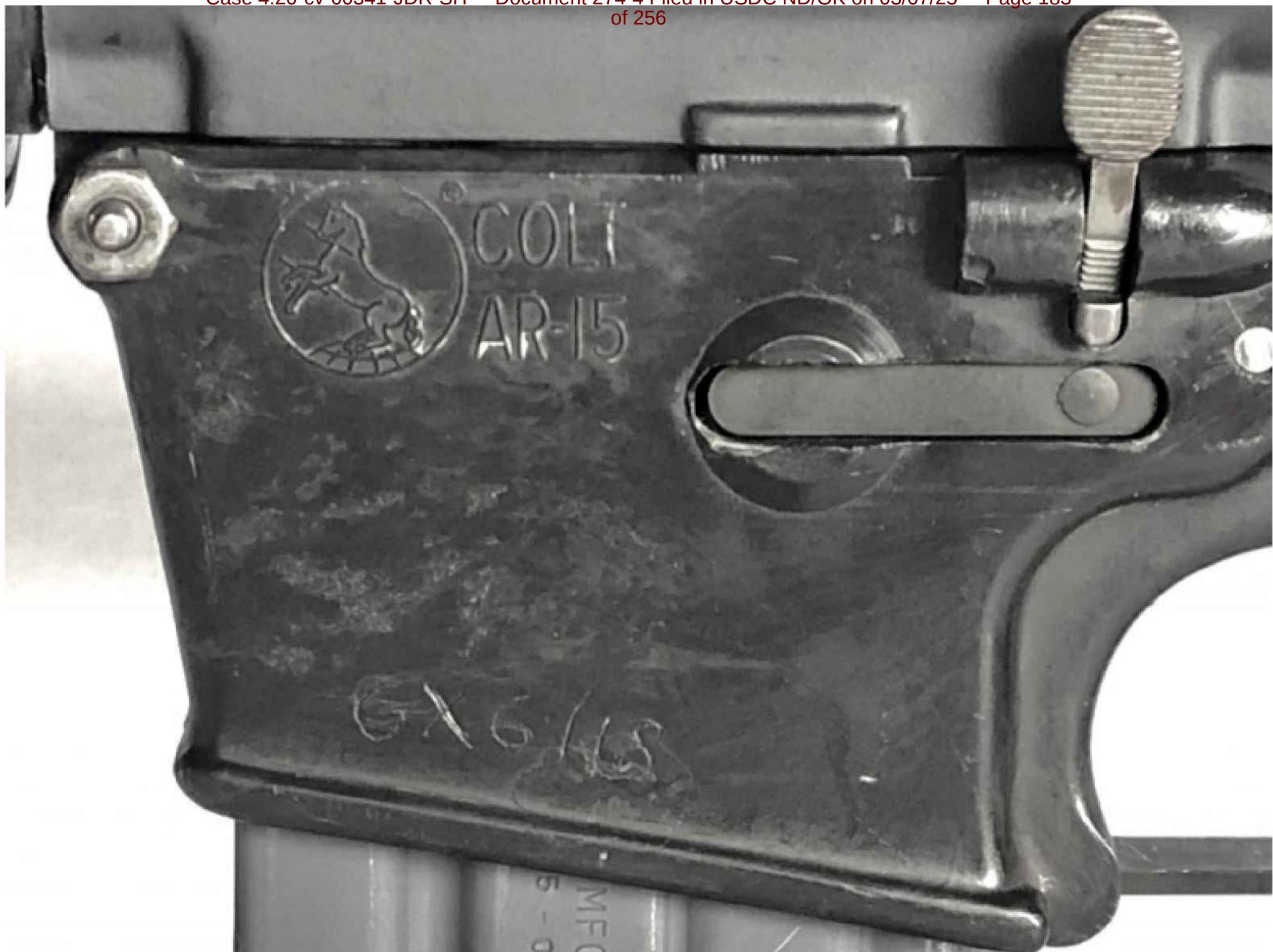
KEA002561





KEA002563





KEA002565



KEA002566



KEA002567



KEA002568



KEA002569



KEA002570



KEA002571





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CAVALRY ARMS SST STOCK

by Chris Choat

I recently tested an SST-870 stock on my Remington 870 14-inch barreled entry gun and came away highly impressed.

Adding decent sights or changing the stock on your favorite combat shotgun has always seemed like an exercise in futility. As far as sights go it usually involved replacing receiver or trigger group pins to add a cumbersome mount platform or drilling and tapping the receiver of the gun. Using the first option you eventually were faced with the question "Where did I put the original pins?" when you wanted to remove the sight and go back to the stock configuration. The second option basically was more than most shooters wanted to tackle. I can even remember a shotgun mount that actually used sticky back double-sided foam to attach the mount semi-permanently to the gun! As for the stock issue, the choices were basically a plastic folding type that felt flimsy or a metal behemoth that was sure to leave you with a king-sized blood blister. And for some reason they always seemed to be made to fit several guns but none really well.

Now Cavalry Arms has introduced a solution to both problems. It is a very well built stock/sight mount combination that they call the SST. Made from a billet of T-6 aluminum and anodized a matte black the new stock is actually an adapter that mirrors the rear end of an AR-15/M16 receiver. This adapter allows the use of any stock that will fit the AR-15 series of rifles including either collapsible or fixed versions. The adapter will also accept any grip available for the AR rifle and is shipped with the ErgoGrip, which has found favor with users worldwide. The non-slip rubber compound of the ErgoGrip seems perfect fitted for use on shotguns. Not only does it provide a very "sticky" grip but it also helps to absorb recoil from heavy buckshot loads as well as slugs.

As if being able to add an AR type stock to your shotgun wasn't enough, the SST also comes with a length of MIL-STD-1913 rail fastened to its top. The rail is cantilever-mounted and extends out over the top of the host gun's receiver. It is attached to the SST adapter by six Allen head screws that make for a very solid optics platform.

I recently tested an SST-870 stock on my Remington 870 14-inch barreled entry gun and came away

<https://www.smallarmsreview.com/display.article.cfm?idarticles=2001>

Image Gallery



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highly impressed. To install the new SST all that is needed is to remove the existing stock by first removing two buttplate screws and then taking out a long bolt that reaches from the rear of the stock to the shotgun's receiver. Once that is done you install the new SST by bolting it on and installing the type of buttstock that you prefer. I chose an M4 six-position collapsible which is also available from Cavalry Arms. I wanted to keep the Model 870 entry gun to as small a package as possible. The six-position M4 stock also allows the stock to be tailored to fit shooters wearing vests or even heavy hunting clothes.

The first thing you notice about the SST is the quality of the machining as well as the fit and finish. The SST adapter fits the Remington like it was molded on it. As far as the finish goes it was a near perfect match. I have several Remington "black" shotguns and their parkerized finish seems to come in several shades of black.

The SST was shipped to me with an ErgoGrip on it. I have to be honest and say that I have never been a fan of this grip. I guess I am a traditionalist but I actually like the original AR-15 grip. But I have to say that after firing several hundred rounds of various 12 gauge loads through the little entry gun I have come away with a whole new perspective on the Ergo Grip. As I said before this sticky grip helps absorb some of the recoil and give the user a positive "hold" on the gun, especially when firing one-handed with the stock tucked under your arm. After firing several boxes of slugs through both this gun and another shotgun with a pistol grip, it was fairly dramatic that the Ergo Grip was helping "suck up" the recoil.

In testing I used two different optics. The first was the OKO red dot reflex sight, which is now being imported from Czechoslovakia. This lightweight (only 2.3 ounces) new sight proved very durable as well as accurate. The sight is water/shock resistant and has an emergency notch and post sight set-up in case the sight should fail. I couldn't get it to fail and I tried. It is available in either 4, 6 or 8 MOA dots with variable intensity and uses common 3-volt lithium US batteries. Battery life is said to be 150 hours on the highest intensity level setting and 1,500 hours on the lowest. There are several models available for mounting on just about any gun. Accessories include a protective metal shield, which covers the glass part of the sight and also a remote pressure pad activation switch. With this pressure pad you can set the sight at any intensity level and then just activate it with the remote pad. The OKO sight has 1/4-inch click windage and elevation adjustments.

I also used an EoTech HOLOsight in my testing. This sight proved to be my favorite for shotgun use. The model I used was the EoTech 552, which features a 65 MOA ring with quadrant ticks around the outside at the 12, 3, 6 and 9 o'clock positions. It has a 1 MOA dot in its center. This particular model uses two "AA" batteries and features 20 brightness intensity levels including several night vision settings. Using the 65 MOA ring the sight proved extremely fast when using buckshot loads. At ranges out to 50 yards as long as the target was in the ring you hit it. Switching to slugs and using the center 1 MOA dot you couldn't miss with this sight. The recoil of heavy buckshot or slug loads was no problem for either of these sights.

The SST stock has another feature worth mentioning. Milled into either side are recesses that accept the Uncle Mike's type push-button quick release sling swivel. This allows for attaching a single point mount sling to either side of the gun.

The unit that I tested was for the Remington 870 shotgun but Cavalry Arms has other models in the works. One of these is a model to fit the ever-popular Mossberg 590 series of shotguns. I'm sure as time goes by even other models are sure to follow. In addition to versions for other guns another accessory for the SST stock should be available by the time you read this. Cavalry Arms will be producing a set of AR style sights for shotguns to be used in conjunction with their SST stock. These sights will include a rear sight to fit the sight rail on the SST as well as a very innovative AR front sight that will fasten to a shotgun barrel. I saw a prototype at the SHOT Show and even the prototype looked well made so I know the finished product will be first rate. Check out the SST stock from Cavalry Arms, you won't be disappointed.

Cavalry Arms Corporation

Dept. SAR
2213 East Arbor Circle
Mesa, AZ 85204
Phone or Fax: 480-833-9685
Website: www.cavalryarms.com

EoTech

Dept. SAR

3600 Green Court, Suite 400
Ann Arbor, MI 48105
Phone: 734-741-8868
Website: www.eotech-inc.com

CHM&D, Ainslie Stock

of 256

*This article first appeared in Small Arms Review V7N11 (August 2004)
and was posted online on August 2, 2013*

SUBSCRIBER COMMENT AREA

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The logo for Small Arms Review. It features a black assault rifle with a消音器 (silencer) attached to the barrel. To the right of the rifle, the words "SMALL ARMS REVIEW" are written in large red capital letters. Below "REVIEW" is a smaller yellow banner with the text "SUBSCRIBE TODAY!". At the bottom right is the website address "SMALLARMSREVIEW.COM".

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The author installed the SST with an M4 collapsible stock on his Remington 870 entry gun. This little gun is very handy for close quarters, but used in conjunction with the SST, the user retains a small package but adds extended range by allowing the use of most types of sights.

Image 1 of 4

CLOSE X



One of the main features of the SST is the ability to add optics as well as open sights.

Image 2 of 4

CLOSE X



into both sides of the SST allow the use of Uncle Mikes quick-release push-button swivels. This assists in adding a single point-type sling very easy. Precision milling allows for a secure lock-up.

Image 4 of 4

CLOSE X



The SST Stock from Cavalry Arms allows the user to install an AR-15/M16 stock on their shotgun, creating a versatile and rugged combat firearm.

Image 3 of 4

CLOSE X



KEA002605







Details

Filing Number:
3512306179

Entity Name:
GWACS ARMORY, LLC

Status:
In Existence

Entity Type:
Domestic Limited Liability Company

Jurisdiction:
Oklahoma

Original Filing Date:
Mar 9 2011

Duration:
Perpetual

Entity Address:
12808 S MEMORIAL DR, SUITE 126 BIXBY, OK, 74008, USA

Registered Agent Information

Name:
CLAYTON E. WOODRUM

Effective:
Jan 7 2016

Address:
321 S BOSTON
STE 200

City,State,ZipCode:
TULSA OK 74103

FILING HISTORY :

Document Number	Filing Type	Filing Date
16417130002	Articles of Organization	March 9, 2011
18304810002	Annual Certificates	January 4, 2012
20888700002	Annual Certificates (BAT)	January 9, 2013
24438170086	Terminated	May 9, 2014
29238660002	Reinstatement	January 6, 2016
29260400002	Change of Registered Agent and/or Office and/or Principal Office	January 7, 2016
32980740002	Annual Certificates	March 9, 2017
35655850002	Annual Certificates	December 29, 2017
40857330150	Terminated	May 9, 2019
44900120002	Reinstatement	May 19, 2020

NAMES INFORMATION

Name	Name Type	Status	Creation Date
GWACS ARMORY, LLC	Legal	In use	May 9, 2019

PRINCIPALS

No entries found.

TRADENAMES

KEA000055

No entries found.

STOCKS INFORMATION

No entries found.

POC:

\$0

TAC:

\$0

Total Investment in OK:

\$0

Qualified:

NO

ARTICLES OF ORGANIZATION

DOMESTIC LIMITED LIABILITY COMPANY

Document Number: 16417130002 Submit Date: 3/9/2011

LIMITED LIABILITY COMPANY NAME

The name of the Limited Liability Company is:
GWACS ARMORY, LLC

PRINCIPAL PLACE OF BUSINESS ADDRESS

907 SOUTH DETROIT AVENUE, SIXTH FLOOR
TULSA, OK 74120 USA

EFFECTIVE DATE

Effective Date:
Same as filing date.

DURATION

Perpetual

REGISTERED AGENT AND REGISTERED OFFICE ADDRESS

Agent Name

JAMES E. WEGER

Address

15 EAST FIFTH STREET, SUITE 3800
TULSA, OK 74103 USA

ATTACHMENTS

File Label

File Name and Path

SIGNATURE

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Dated - 3/9/2011

Signature Names

JAMES E. WEGER

[End Of Image]

OFFICE OF THE SECRETARY OF STATE



**CERTIFICATE
OF
LIMITED LIABILITY COMPANY**

WHEREAS, the Articles of Organization of

GWACS ARMORY, LLC

an Oklahoma limited liability company has been filed in the office of the Secretary of State as provided by the laws of the State of Oklahoma.

NOW THEREFORE, I, the undersigned, Secretary of State of the State of Oklahoma, by virtue of the powers vested in me by law, do hereby issue this certificate evidencing such filing.

IN TESTIMONY WHEREOF, I hereunto set my hand and cause to be affixed the Great Seal of the State of Oklahoma.



*Filed in the city of Oklahoma City this
9th day of March, 2011.*

A handwritten signature in black ink, appearing to read "V. Sloan Coffey".

Secretary of State

Annual Reports

Document Number 18304810002 Submit Date - 1/4/2012

Pursuant to Title 18, Oklahoma Statutes, Section 2055.2, every domestic limited liability company and every foreign limited liability company registered to do business in this state shall file an Annual Certificate each year in the Office of the Secretary of State. The certificate shall confirm it is an active business and must include its principal place of business address.

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The street address of the principal place of business address, wherever located:

907 SOUTH DETROIT AVENUE, SIXTH FLOOR
TULSA, OK 74120 USA

The annual certificate is due on the **anniversary date of each year** and will have a fee of **\$25.00**.

A limited liability company that neglects, refuses, or fails to file the annual certificate within sixty (60) days after the date due shall cease to be in good standing as a domestic limited liability company or registered as a foreign limited liability company in this state.

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

RUSSELL L. ANDERSON

Title:

DIRECTOR OF PROGRAMS

[End Of Image]

Annual Certificates (BAT)

Document Number 20888700002 Submit Date - 1/9/2013

Pursuant to Title 18, Oklahoma Statutes, Section 2055.2, every domestic limited liability company and every foreign limited liability company registered to do business in this state shall file an Annual Certificate each year in the Office of the Secretary of State. The certificate shall confirm it is an active business and must include its principal place of business address.

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

907 SOUTH DETROIT AVENUE, SIXTH FLOOR

TULSA, OK 74120 USA

Email: dena.repicky@wktw.net

The annual certificate is due on the **anniversary date of each year** and will have a fee of **\$25.00**.

A limited liability company that neglects, refuses, or fails to file the annual certificate within sixty (60) days after the date due shall cease to be in good standing as a domestic limited liability company or registered as a foreign limited liability company in this state.

The undersigned claims a credit of \$25 pursuant to 18 O.S. § 1142.2 for paying the Business Activity Tax.

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

JUDSON GUDGEON

Title:

PRESIDENT

[End Of Image]

OFFICE OF THE SECRETARY OF STATE



**CERTIFICATE
OF
REINSTATEMENT**

WHEREAS, the Application for Reinstatement of

GWACS ARMORY, LLC

has been filed in the office of the Secretary of State as provided by the laws of the State of Oklahoma.

NOW THEREFORE, I, the undersigned, Secretary of State of the State of Oklahoma, by virtue of the powers vested in me by law, do hereby issue this certificate evidencing such reinstatement.

IN TESTIMONY WHEREOF, I hereunto set my hand and cause to be affixed the Great Seal of the State of Oklahoma.



*Filed in the city of Oklahoma City this
6th day of January, 2016.*

A handwritten signature in black ink, appearing to read "Chris Bellinger".

Secretary of State

Reinstatement

Document Number 29238660002 Submit Date - 1/6/2016

I hereby execute the following articles for the purpose of reinstating a limited liability company pursuant to the provisions of Title 18, Section 2055.2:

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

907 SOUTH DETROIT AVENUE, SIXTH FLOOR

TULSA, OK 74120 USA

Email: randerson@gwacsarmory.com

The annual certificates due and paid by this reinstatement are:

<u>YEAR:</u>	<u>DUE DATE:</u>
2014	9 Mar 2014
2015	9 Mar 2015

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Exact Business Entity Name:

GWACS ARMORY LLC

Signature:

JUDSON M. GUDGEON

Title:

MANAGER

[End Of Image]

Change of Registered Agent and/or Office and/or Principal Office

Document Number 29260400002 Submit Date - 1/7/2016

The undersigned manager, for the purpose of changing the resident agent and/or registered office and/or principal office of an Oklahoma limited liability company pursuant to 18 O.S., Section 2010.B., hereby executes the following statement authorizing such change:

The name of the limited liability company is:
GWACS ARMORY, LLC

The name and street address of the resident agent for service of process in the State of Oklahoma is:

**CLAYTON E. WOODRUM
321 S BOSTON, STE 200
TULSA, OK 74103 USA**

The street address of the principal place of business, wherever located:

**907 SOUTH DETROIT AVENUE, SIXTH FLOOR
TULSA, OK 74120 USA**

The date on which the amendment is to be effective, if it is to be effective after the filing date:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

JUDSON GUDGEL

Title:

INDIVIDUAL

[End Of Image]

Annual Certificates

Document Number 32980740002 Submit Date - 3/9/2017

Pursuant to Title 18, Oklahoma Statutes, Section 2055.2, every domestic limited liability company and every foreign limited liability company registered to do business in this state shall file an Annual Certificate each year in the Office of the Secretary of State. The certificate shall confirm it is an active business and must include its principal place of business address.

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

1000 RIVERWALK TERRACE, STE 100, STE 200

JENKS, OK 74037 USA

Email: clayton.woodrum@wktw.net

The annual certificate is due on the **anniversary date of each year** and will have a fee of **\$25.00**.

A limited liability company that neglects, refuses, or fails to file the annual certificate within sixty (60) days after the date due shall cease to be in good standing as a domestic limited liability company or registered as a foreign limited liability company in this state.

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

JUDSON GUDGEL

Title:

MEMBER MANAGER

[End Of Image]

Annual Certificates

Document Number 35655850002 Submit Date - 12/29/2017

Pursuant to Title 18, Oklahoma Statutes, Section 2055.2, every domestic limited liability company and every foreign limited liability company registered to do business in this state shall file an Annual Certificate each year in the Office of the Secretary of State. The certificate shall confirm it is an active business and must include its principal place of business address.

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

1000 RIVERWALK TERRACE, STE 100, STE 200

JENKS, OK 74037 USA

Email: clayton.woodrum@wktw.net

The annual certificate is due on the **anniversary date of each year** and will have a fee of **\$25.00**.

A limited liability company that neglects, refuses, or fails to file the annual certificate within sixty (60) days after the date due shall cease to be in good standing as a domestic limited liability company or registered as a foreign limited liability company in this state.

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

CLAYTON E. WOODRUM

Title:

[End Of Image]

OFFICE OF THE SECRETARY OF STATE



**CERTIFICATE
OF
REINSTATEMENT**

WHEREAS, the Application for Reinstatement of

GWACS ARMORY, LLC

has been filed in the office of the Secretary of State as provided by the laws of the State of Oklahoma.

NOW THEREFORE, I, the undersigned, Secretary of State of the State of Oklahoma, by virtue of the powers vested in me by law, do hereby issue this certificate evidencing such reinstatement.

IN TESTIMONY WHEREOF, I hereunto set my hand and cause to be affixed the Great Seal of the State of Oklahoma.



*Filed in the city of Oklahoma City this
19th day of May, 2020.*

A handwritten signature in black ink that reads "Michael Rogers".

Secretary of State

Reinstatement

Document Number 44900120002 Submit Date - 5/19/2020

I hereby execute the following articles for the purpose of reinstating a limited liability company pursuant to the provisions of Title 18, Section 2055.2:

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

12808 S MEMORIAL DR, SUITE 126
BIXBY, OK 74008 USA

Email: clayton.woodrum@wktw.net

The annual certificates due and paid by this reinstatement are:

<u>YEAR:</u>	<u>DUE DATE:</u>
2019	9 Mar 2019
2020	9 Mar 2020

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

JUDSON GUDGEON

Title:

MANAGER

[End Of Image]

Annual Certificates

Document Number 47467250002 Submit Date - 12/22/2020

Pursuant to Title 18, Oklahoma Statutes, Section 2055.2, every domestic limited liability company and every foreign limited liability company registered to do business in this state shall file an Annual Certificate each year in the Office of the Secretary of State. The certificate shall confirm it is an active business and must include its principal place of business address.

The name of the limited liability company is:

GWACS ARMORY, LLC

If different, the name under which the limited liability company was registered in the state of Oklahoma:

The state or other jurisdiction of its formation:

OK

Is the Limited Liability Company active? YES

The address of the principal place of business address, wherever located:

12808 S MEMORIAL DR, SUITE 126

BIXBY, OK 74008 USA

Email: clayton.woodrum@wktw.net

The annual certificate is due on the **anniversary date of each year** and will have a fee of **\$25.00**.

A limited liability company that neglects, refuses, or fails to file the annual certificate within sixty (60) days after the date due shall cease to be in good standing as a domestic limited liability company or registered as a foreign limited liability company in this state.

Signature of Member or Manager:

I hereby certify that the information provided on this form is true and correct to the best of my knowledge and by attaching the signature I agree and understand that the typed electronic signature shall have the same legal effect as an original signature and is being accepted as my original signature pursuant to the Oklahoma Uniform Electronic Transactions Act, Title 12A Okla. Statutes Section 15-101, et seq.

Signature:

CLAYTON WOODRUM

Title:

[End Of Image]

OFFICE OF THE SECRETARY OF STATE



CERTIFIED COPY OF ALL DOCUMENTS ON FILE

CERTIFICATE

I THE UNDERSIGNED, Secretary of State of the State of Oklahoma, do hereby certify that, to the date of this certificate, the attached is a true and correct copy of all documents on file in this office as described below of:

NAME OF ENTITY
GWACS ARMORY, LLC

DOCUMENT TYPE

Annual Certificates
Reinstatement
Annual Certificates
Annual Certificates
Change of Registered Agent and/or Office and/or Principal Office
Office and/or Principal Office
Reinstatement
Annual Certificates (BAT)
Annual Reports
Articles of Organization

DOCUMENT FILING DATE

December 22, 2020
May 19, 2020
December 29, 2017
March 09, 2017
January 07, 2016
January 06, 2016
January 09, 2013
January 04, 2012
March 09, 2011

IN TESTIMONY WHEREOF, I hereunto set my hand and affixed the Great Seal of the State of Oklahoma, done at the City of Oklahoma City, this 19th, day of May, 2021.



A handwritten signature in black ink, appearing to read "Kevin P. Johnson".

Secretary Of State

Product History and Overview

CAV-15 "MKI" Receiver

The CAV-15 injection molded AR15 receiver was first unveiled by Cavalry Arms at the 2000 Soldier of Fortune Convention in Las Vegas, Nevada. The first CAV-15 receivers shipped to consumers in December of 2000.



All CAV-15 receivers were injection molded in two halves from glass filled nylon 6, but the design went through 4 generations of revisions as assembly techniques were perfected and issues with the product addressed.

CAV-15 "MKI" Generation 1: The plastic of these receivers was untextured, and the halves were assembled together using screws only. Very few of these receivers remain in existence; most were remanufactured as later versions.





CAV-15 "MKI" Generation 2: The plastic of these receivers was untextured, and the halves were assembled together using a combination of screws and sonic welding. Very few of these receivers remain in existence; most were remanufactured as later versions.



CAV-15 "MKI" Generation 3: The plastic of these receivers was untextured, and the halves were assembled together using screws and more sonic welding. Internal structural enhancements were incorporated as well.



CAV-15 "MKI" Generation 4: Same as the Gen3, except texturing was added to the plastic.



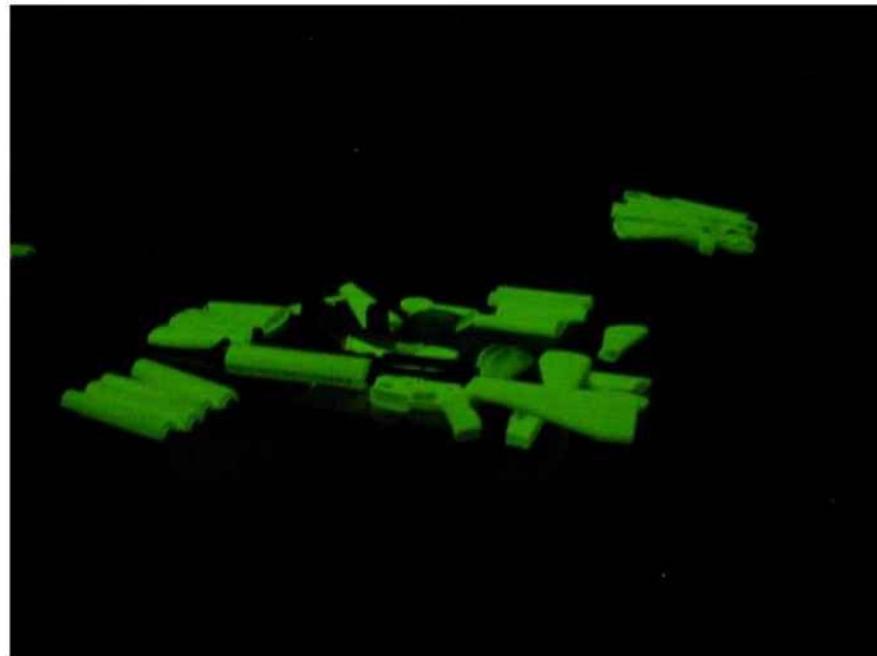
Other Notes

Speed Pins: To reduce scrap rate and increase product durability, Cavalry Arms switched from standard military style take down pins to "Speed Pins" that have the spring and detent built into them. Speed Pins are still standard mil-spec diameter. Some Gen3 and roughly half of the Gen4 receivers in existence use these pins.

Shortened Receivers: The CAV-15 "MKI" had a 14.5" length of pull, making it longer than an A2 stock. To meet the demand for requests for shorter stocks, Cavalry Arms offered stock shortenings for their receivers making them roughly A1 length. The process involved chopping off the end of the stock, running a delrin plug into the buffer tube that the buttplate would screw into. Screws were run into the sides of the stock into the plug for structural support. This process also made the receiver use a carbine buffer system. The popularity of the shorter stock is why the CAV-15 MKII was designed with a 13" LOP stock.



Seven Glow in the dark receivers were made and given to company investors and staff in 2002.



CAV-15 "MKI" receivers were discontinued in February of 2003 with the announcement of the upcoming CAV-15MKII at SHOT Show. Existing inventory of CAV-15 MKI receivers was sold off to wholesalers. The CAV-15 MKII replaced the CAV-15 "MKI" in the Cavalry Arms Product line.

CAV-15 MKII Receivers

CAV-15 MKII receivers were released in November of 2003, replacing the CAV-15 in Cavalry Arms Corp's product line. The original CAV-15s were called "MKI" retroactively to establish their difference from the CAV-15 MKII. Cavalry Arms Corp. sold CAV-15 MKIIs until it gave up its FFL in March of 2010

CAV-15 MKIIs are the most prolific CAV-15 receiver with thousands having been produced. Standard colors included Black, OD Green, Coyote Brown, Foliage Green, and Dark Earth. Special production runs in Pink, Light Blue, Dark Blue, Blaze Orange, Electric Green, Pigeon Gray, Urban Gray, Yellow, and others. Some colors are much more rare than others.

The CAV-15 MKII was also produced under marking variances for Sabre Defence as the SR-15 "Light Sabre" and for Eagle Arms as the M15P. Both of these were only available in black.



CAV-15 "MKI" top, CAV-15 MKII bottom

CAV-15 MKII Receivers were injection molded from glass filled nylon 6, a polymer material very similar to that used by other firearms companies. Polymer offers unsurpassed corrosion resistance, finish durability, and is significantly lighter than aluminum based receivers.

The receivers were molded in two halves and assembled using a linear vibration welding process. Linear vibration welding formed the two halves into one solid piece. Every contact surface between the two halves was bonded together with a weld that was even stronger than the parent material.



CAV-15 MKII Receiver Features:

- A1 Length integral Stock (5/8" shorter than A2) with sling loop. 13" Length of Pull.
- Carbine buffer system
- Ergonomically enhanced integral pistol grip
- Wider magazine well capable of accepting .45 Greasegun magazines with caliber conversion upper receivers and magazine blocks. Standard AR15 magazines can be used without modifications. .45ACP Carbines were a popular project gun for many shooters. Hahn Precision mag block and buffer are required for use with Olympic Arms .45 ACP upper.
- Receiver weight (complete) is 1 full pound lighter than complete aluminum receiver with A2 stock
- Uses all standard mil-spec parts with the exception of the take down pins. The front pivot and rear pins are a Quick Take down style with Detents built into them, This allows for quick and easy removal of the pins while maintaining a positive lock.



Over the course of its production, small improvements to smooth out the manufacturing process were incorporated into the CAV-15 MKII.

A new serial number tag was also designed and approved by BATF Firearms Technology branch that was more difficult to remove or alter without substantially damaging the receiver.

Over 10 years, 11,000 CAV-15 receivers were made of all types. The last two production runs of the CAV-15 MKII were the largest at 3,000 receivers each in 2009 and 2010 respectively.

Year	Annual Gross Sales	Notes
2000	\$1,037.50	Original CAV-15 unveiled at SOF convention in October
2001	\$30,496.00	
2002	\$43,868.60	
2003	\$16,291.00	MKI discontinued in January, MKII not for sale until November
2004	\$71,943.19	First year sales of CAV-15 MKII
2005	\$46,458.50	Cavalry Arms focus shifts away from selling CAV-15s, OEM sales of stocks given priority with sunset of AWB in Sept of 2004
2006	\$23,962.61	November 2006 to August 2007, no receivers sold while serial number tag regulatory issues resolved with BATF tech branch
2007	\$27,741.80	Serial number tag issues resolved in August, CAV-15s only sold for 4 months during this year
2008	\$100,070.50	All manufacturing processes moved in house, scrap rates reduced, priority given to receiver and rifle sales from 2008 onward
2009	\$130,056.10	
2010	\$161,451.65	All sales from January to beginning of March only. Cav Arms FFL closed at beginning of March.

Note these figures do not include sales of complete rifles and related components

CAV-15 receivers cost approximately \$5.00 a piece to manufacture (materials and labor). The lowest price they were sold for OEM was \$45.00. More commonly they were sold for \$75 (distributor) to \$125 (retail).

As you may note from the numbers above, the majority of the CAV-15 MKII production and sales occurred during the final 2 years of Cavalry Arms operations. Increased production capacity and efficiency, marketing, and increased product recognition all contributed to this.

The 2009 and 2010 production runs had lowest scrap rates due to streamlining of molding processes and secondary operations. Cavalry Arms invested 10 years into making the CAV-15 into a functional, reliable, cost effective product. The benefit of this experience and design cycle cannot be over stated; new entrants to the polymer receiver market have and will face design issues that the CAV-15 has already solved.

Production

The CAV-15 Mold weighs 1,710 pounds and requires a 300 ton injection molding press for both halves to be run at the same time. It can be run in a smaller press one half at a time if that is all that is available.

Serial number tags are inserted into the mold by the press operator between shots. Cycle time including the operator inserting the serial number tag is 60-75 seconds.

Serial number tags can be engraved before or after the molding process. If the engraving is to be done by an outside company, it would be preferable from a regulatory standpoint to engrave them before molding them into the receiver.

The two halves of the receiver are assembled using the linear vibration welder by placing them in their respective fixtures and nuts for the buttplate placed into the stock. The welder operator presses two buttons simultaneously and the welder does the rest of the work by vibrating both halves at a high frequency melting/knitting the nylon fibers together. Loading and cycle time for the welder is 2-3 times faster than the molding process itself.

Secondary operations are then performed on the welded receiver including drilling the safety selector hole, bolt catch roll pin hole, and buffer detent retaining roll pin hole. Take down pin holes, buffer detent hole, and bolt catch detent hole are all reamed. Flash from the welding process is trimmed off with hand tools. Training time for secondary operations is minimal.

Tooling and
Equipment



The CAV-15 Mold/Mold Base



The cavities removed from the mold base.



Insert for receiver marking; can be swapped out for OEM runs of receivers for other companies.

The sales package for the mold and intellectual property rights would also include:

Fixtures for drilling operations

Serial number tags (1,000+)

Take down pins sets (1,500+)



Linear Vibration Welder



Bottom fixture inside the linear vibration welder for right half of the receiver



Top fixture inside the linear vibration welder for the left half of the receiver.

Van Dorn 300 Ton Press

















From: Tim McBride <timmcbride@gmail.com>
Date: October 8, 2022 at 7:45:45 PM MST
To: russell@kearms.com
Subject: From Tim; Fwd: Cav15 dealer inquiry

----- Forwarded message -----

From: <dealer@gwacsarmory.com>
Date: Tuesday, January 15, 2013
Subject: RE: Cav15 dealer inquiry
To: Tim McBride <timmcbride@gmail.com>

Thank you for your interest in becoming a dealer with GWACS Armory. Attached is our dealer agreement which you will need to sign and email scanned copy back. Also attached is our warranty and technical notes as well as our 2013 dealer pricing. We require a minimum purchase of five at this time. Currently all dealer orders are being handled by Shel Jones on his Cell phone, 202-595-4683.

We are currently producing stock and can ship within one week or less.

----- Original Message -----

Subject: Cav15 dealer inquiry
From: Tim McBride <timmcbride@gmail.com>
Date: Thu, August 23, 2012 3:48 pm
To: dealer@gwacsarmory.com

Interested in seeing if your company was setting up with dealers yet?

Regards,
Tim McBride
owner, EVC-3

GWACS ARMORY LLC



NON-EXCLUSIVE DEALER AGREEMENT

This Non-Exclusive Dealer Agreement (“Agreement”) is entered into by and between GWACS Armory LLC, as supplier/manufacturer (“GAL”) having its principal place of business at 907 S. Detroit Ave., 6th Floor, Tulsa, Oklahoma 74120, and the Dealer described below concerning Dealer’s sale of GAL Products within the United States to the Dealer’s customers and the public.

DEALER

NAME: _____

ADDRESS: _____

TELEPHONE: _____

FACSIMILE: _____

CONTACTS PRIMARY: _____

 EMAIL: _____

 TELEPHONE: _____

 SECONDARY: _____

 EMAIL: _____

 TELEPHONE: _____

PAYMENT
TERMS: _____

DATE: _____

This Agreement (including all of the terms and conditions attached as pages 5 through 8 hereto) constitutes the entire agreement between GAL and Dealer regarding the subject matter hereof and all prior agreements, correspondence, discussions and understandings of the parties (whether oral or written) are superseded hereby, it being the express intention of the parties that this Agreement shall serve as the complete and exclusive statement of the terms of their agreement together. No amendment, waiver or other modification to all or any portion of this Agreement or the rights and obligations of the parties hereunder shall be valid unless in writing and signed by the parties. The parties acknowledge that they have read the following terms and conditions and are agreeable thereto. Neither party has upon any statements, representations, or other communications that are contained in this Agreement.

GAL, INC.

DEALER

By: _____

By: _____

Title: _____

Title: _____

GWACS ARMORY LLC



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GWACS ARMORY LLC



Dealer Agreement Instructions

If you are interested in becoming a dealer for GWACS Armory CAV15 MKII lower receivers, please follow the instructions below. Once GWACS Armory has received all of the required information and approved your application, GWACS Armory will sign the agreement and return a copy to you notifying you of your acceptance as a dealer.

1. Complete the information page and return it to a GWACS Armory representative (GWACS Armory will return a signed copy to you upon your approval)
2. Provide the following items to GWACS Armory either by mail or by scanning and emailing to dealers@gwacsarmory.com:
 - a. Copy of the documents establishing your company (i.e., articles of incorporation, LLC certificate, business license, etc.)
 - b. Copy of current FFL
 - c. Resale tax number and any supporting documentation
 - d. Minimum Initial Order, as set out in paragraph 5 of the agreement

If you have any questions, you may contact GWACS Armory at dealers@gwacsarmory.com, or you can call Shel Jones at 202-595-4683, or Shannon Ramsey at 918-645-6277.

GWACS ARMORY LLC



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GWACS ARMORY LLC



TERMS AND CONDITIONS OF AGREEMENT

1. Dealer Qualifications; Appointment: In order to qualify as a GAL dealer, Dealer must (i) be primarily engaged in the business of selling small arms to the public; (ii) possess all requisite business licenses in accordance with all local, state, and federal laws; (iii) possess a resale tax number and provide a copy of this document to GAL; (iv) possess a Federal Firearms License (FFL) for all firearm sales and transfers; (v) submit and pay the Minimum Initial Order for the first year of this Agreement and Minimum Annual Order each year thereafter, as provided in Section 5 below, and (vi) abide by all of the other terms and conditions set forth herein. Subject to the foregoing, GAL hereby appoints Dealer as an authorized non-exclusive dealer of the products ("Products") described in GAL's current dealer product list, and Dealer agrees to purchase the Products from GAL and to devote its continuing best efforts to the promotion and sale of the Products.

2. Term of Agreement: This Agreement shall commence as of the date first written above and expire one year from said date. This Agreement will automatically renew for successive one year periods unless either party submits a written termination notice to the other party not later than thirty (30) days prior to the automatic renewal date, and as provided below.

3. Additions, Discontinuations and Modifications: GAL shall have the right at any time to introduce new Products, discontinue the manufacture or sale of any of its Products and make changes in the design or construction of any such Products without incurring any obligation or liability to Dealer whatsoever. Any purchase order modification by Dealer must be completed by giving written notice to GAL at least sixty (60) days prior to the scheduled shipping date, provided that any notice to decrease the order quantity or price must be submitted and accepted at least ninety (90) days prior to the scheduled shipment date, subject to the terms of paragraph 13 below.

4. Rebate, Discount, and Other Incentive Programs: GAL, in its sole discretion, may at different times, and from time to time, offer or publish to Dealer certain rebate, discount or other incentive programs. GAL reserves the right to withdraw such rebate programs prior to commencement thereof, and, unless otherwise provided, any and all rebate programs shall be subject to the terms and conditions of this Agreement.

5. Orders: This Agreement is contingent upon Dealer (a) initially purchasing not less than FIVE (5) lower receivers from GAL for immediate shipment (no scheduling permitted) (the "Minimum Initial Order") and (b) purchasing not less than two (2) lower receivers from GAL during each renewal term (the "Minimum Annual Order"); provided, however, that if Dealer's account is idle for more than twelve (12) consecutive months, Dealer will be required to execute another Minimum Initial Order to reactivate its Dealer status hereunder. In each case, Dealer shall issue purchase orders for Products. Dealer's purchase orders shall not be effective until acceptance is acknowledged in writing by GAL. Purchase orders will be accepted by GAL only in accordance with the terms and

conditions of this Agreement. Orders shall be made by Dealer in writing only (i) by mail to GAL at 907 S. Detroit Ave., 6th Floor, Tulsa, Oklahoma 74120; (ii) by email to dealers@gwacsarmory.com; or (iii) by way of GAL's website at www.gwacsarmory.com. (A telephone request to purchase, or to modify an existing order, shall not be considered an order unless and until followed up in writing.) All orders shall be subject to written acceptance by GAL. Dealer acknowledges and agrees that this Agreement supersedes any inconsistent terms or conditions set forth in Dealer's purchase orders. Accordingly, if there is any conflict between the terms and conditions contained in Dealer's purchase order and the terms and conditions contained in this Agreement, this Agreement shall control and govern in all respects.

6. Prices: Products will be sold to Dealer at the Dealer Prices published in the current GAL Price Guide and otherwise in accordance with the terms and conditions of this Agreement. GAL may implement price changes at any time during the term of this Agreement, and will endeavor to the best of its ability to provide thirty (30) days prior written notice thereof to Dealer.

7. Delivery and Freight: Shipping and other transport, transfer and delivery charges will be invoiced to the Dealer for all Products ordered from GAL at the prevailing rates available to GAL through common carriers. All orders are shipped from the point of manufacture. Shipping charges will be added to the Dealer's invoice. Orders will be shipped UPS Ground, Federal Express, or other acceptable common carrier unless other arrangements are made in advance and agreed to in writing by both the Dealer and GAL. As part of any rebate, discount or other incentive programs, GAL may at different times, and from time to time, at its sole discretion, offer reduced shipping rates and other incentives based upon Dealer meeting certain criteria.

8. Dealer's Remedies: If GAL, for any reason whatsoever, fails or is unable to deliver any Products ordered by the Dealer, the Dealer's sole and exclusive remedy shall be the recovery of the purchase price, if any, paid by the Dealer to GAL for such Products. GAL shall not incur any liability whatsoever for any delay in the delivery of any Products. In no event shall GAL be liable for any incidental, consequential or other damages arising out of any failure to deliver any Products to the Dealer or any delay in the delivery thereof.

9. Payment Terms/Authorized Credit Checks: Upon GAL approving Dealer's credit, GAL shall invoice the Dealer for the Products at the time of shipment. Dealer shall make payment on the terms described on the first page of this Agreement. In the event the Dealer fails to pay in accordance with such terms, the Dealer hereby agrees to pay a monthly service charge equal to the lesser of one and one-half percent (1.5%) or the maximum rate permitted under applicable law. In addition to the initial credit check conducted prior to entering this Agreement, Dealer authorizes GAL to run complete credit checks of Dealer at any time and from time to time during the term of this Agreement as GAL deems necessary or prudent in its sole discretion. Dealer agrees that it shall complete all necessary forms to authorize and otherwise to accommodate

GWACS ARMORY LLC



such credit checks within ten (10) days following GAL's written request. Dealer further agrees to provide GAL with financial statements in such form as GAL may reasonably require at any time and from time to time for credit purposes.

10. Sales and Marketing: Dealer shall not advertise any Product for less than the Minimum Advertised Price ("MAP"). The MAP for each Product shall be as indicated in the most recent Price Guide published by GAL. The GAL Price Guide may be revised at any time and from time to time without notice. Advertising, for the purposes of this Agreement, shall be any presentation, offer, or solicitation for purposes of sale to the general public of GAL products by the Dealer, whether within or external to Dealer's place(s) of business. This shall include, but is not limited to: price lists, newspaper and magazine advertisements, catalogs, flyers, direct mailings, mass mailings, signs, billboards, and/or banners. These advertising standards also apply to promotions or advertising in conjunction with off premise events (e.g., gun shows, auctions, flea markets, user groups, etc.) at or in which the Dealer participates for the purpose of selling GAL brand or distributed products. It is also understood that this Agreement covers any and all forms of electronic sales promotions to the general public to include, but not limited to, radio, television, facsimiles, electronic mail, Internet (including online auctions, user groups, gun shows, flea markets, etc.) websites, and other media. GAL may at different times, and from time to time, at its sole discretion, provide Dealer with merchandising assistance in the form of advertising programs and Product and sales training. Dealer agrees to fully utilize such assistance in carrying out GAL's merchandising policies.

11. Use of Trademarks and Intellectual Property: Dealer acknowledges GAL's exclusive right, title, and interest to its trademarks, trade names, trade-dress, service marks, patents and other intellectual property (collectively referred to as "Intellectual Property") belonging to GAL, and will not at any time, be responsible for any act or thing contesting or in any way impairing or tending to impair any part of GAL's rights to its Intellectual Property. Dealer is permitted to use the trademarks, service marks, brand identification and trade names to promote the sale of GAL products only in accordance with GAL's instructions. Dealer does not have the right to sublicense or otherwise designate the right to use any Intellectual Property belonging to GAL. If the Dealer wishes to advertise a GAL product in conjunction with its own products, a separate written Trademark License Agreement will be required.

12. Compliance with Laws: Dealer hereby covenants, warrants and represents as follows:

- a) Dealer is duly organized, validly existing and in good standing under the laws of its place of organization.
- b) Dealer has the power and authority to enter into this Agreement and to carry out its obligations hereunder.
- c) No consent or approval is required from any governmental organization or other third party for the execution or

performance of this Agreement, provided, however, that certain approvals may be needed for the execution or performance of definitive agreements that may be entered into pursuant hereto.

d) Dealer agrees to comply with any and all applicable laws and regulations, and shall require all of its employees, representatives and any other business associates retained in conjunction with the activities described in this Agreement to do likewise. Any such failure to effect compliance shall be a breach of this Agreement.

e) The sale and export of firearms, weapons and related products are heavily regulated by the United States Government. All weapon sales must be approved and authorized in writing by certain agencies and branches of government, including without limitation, the United States Congress, State Department (the "State Department") and Bureau of Alcohol, Tobacco and Firearms ("ATF"). Accordingly, this Agreement and any purchase order or other contract between the parties shall be expressly subject to, and conditioned and contingent upon, Dealer receiving all necessary approvals, authorizations and certifications from the State Department, ATF and all other government branches and agencies that regulate the manufacture, sale, distribution and export of weapons in or from the United States.

f) Dealer will not export GAL Products outside of the United States without prior express written permission from GAL and in conjunction with an approved Export License issued by the U. S. Department of State. United States law restricts the export or re-export of products to certain people, countries, and end users. Dealer agrees to comply with these laws and will not sell, or otherwise provide Products to anyone either in the United States or abroad in violation of these export restrictions, including without limitation, the U.S. Export Administration Regulations ("EAR"), International Traffic in Arms Regulations ("ITAR"), the Arms Export Control Act ("AECA"), the Export Administration Act ("EAA"), as implemented through the International Economic Emergency Powers Act), the Anti-Boycott Regulations and Guidelines issued under the Export Administration Act, as amended, Section 999 of the Internal Revenue Code ("Anti-Boycott Regulations"), and the Foreign Corrupt Practices Act ("FCPA"). Dealer further agrees not to sell, or otherwise provide products to anyone who does not agree to comply with export laws of the United States.

13. Termination of this Agreement (without cause): Either GAL or Dealer may terminate this Agreement in its entirety at any time, with or without cause, by giving written notice to the other party effective thirty (30) days after the date of receipt, provided, however, that in any event, Dealer is required to pay, fulfill and otherwise comply with any purchase orders regarding Products that would be shipped within ninety (90) days after the termination notice is received by GAL, regardless of whether such shipment actually occurs within said ninety (90) days, so long as GAL has commenced manufacturing said Products during said ninety (90) day period.

GWACS ARMORY LLC



14. Termination of this Agreement (for cause): Notwithstanding anything herein to the contrary, GAL, at its sole discretion, may suspend or deny shipments of Products to the Dealer, and/or terminate this Agreement, for any of the following reasons:

- a) Dealer's material breach of this Agreement;
- b) Insolvency of the Dealer; filing of a voluntary petition in bankruptcy by Dealer; appointment of a receiver or a trustee for the Dealer; execution by the Dealer for the benefit of creditors; sale or transfer by operation of law or otherwise, to any third party, assets of the Dealer that are required for the conduct of its business;
- c) Failure to pay the Dealer's obligations to GAL according to any credit terms granted by GAL; providing inaccurate or misleading financial information upon which GAL has relied in granting credit;
- d) Submission by the Dealer of any false or fraudulent application or claim for reimbursement, warranty compensation or other discount or allowance under any GAL program;
- e) Dealer's promoting, selling, or dealing in any products manufactured by other companies which, in any way infringes the GAL Intellectual Property or in any way erodes or diminishes the GAL brand;
- f) Dealer's failure to comply with the GAL MTP guidelines;
- g) If Dealer degrades or places in bad repute the name and reputation of GAL expressly or by virtue of its methods of handling and/or promoting the Products;
- h) GAL determines that Dealer's credit is insufficient or inadequate;
- i) Failure of Dealer for any reason to function in the ordinary course of business; or,
- j) Conviction of Dealer, or a manager, partner, principal officer, owner, or major stockholder of Dealer for any violation of law tending, in the sole opinion of GAL, to affect adversely the operation or business of Dealer or the good name, goodwill, or reputation of GAL, products of GAL, or Dealer.

Termination of this Agreement, by either party, will not release the Dealer from the obligation to timely pay outstanding invoices to GAL, nor release the Dealer from performing any obligations required by this Agreement subsequent to termination.

GAL shall have no liability to Dealer by any reason of any termination or cancellation of this Agreement, including without limitation, liability for direct or indirect damages on account of loss of income arising from anticipated sales, compensation, or for expenditures, investments, leases or other commitments or for loss of goodwill or business opportunity or otherwise.

15. Return of GAL Property: At GAL's request, Dealer agrees to promptly return to GAL any and all product samples, sales and marketing materials, and other proprietary documents, manuals and information of or belonging to GAL, following the termination of this Agreement or for any other reason or purpose, in GAL's sole discretion. Upon any such request, Dealer further agrees to refrain from making or retaining any copies or extracts of such property or materials.

16. Acceptance or Rejection of Products: Dealer shall have thirty (30) days following delivery to reject all or part of any shipment because it contains nonconforming Products by providing written notice to GAL. Such written notice shall specifically identify which Products are nonconforming and why. A Return Merchandise Authorization (RMA) must be obtained from GAL prior to returning any Products. Dealer shall be entitled to a refund or credit for any nonconforming Products within fifteen (15) days after GAL has received the RMA and returned Products. Dealer's failure to notify GAL of any nonconforming Products within thirty (30) days receipt of the Products shall be deemed an acceptance of such Products.

17. State of Emergency: GAL reserves the right to suspend shipments without prior notice to Dealer in order to fulfill military or police orders during time of local or national emergency. Such suspension shall not constitute a breach under this Agreement. GAL apologizes for any inconvenience that this may cause and will make every effort to get Product to its valued dealers as soon as possible.

18. Relationship of the Parties: The relationship of the parties established by this Agreement is that of vendor and vendee, and all work and duties to be performed by the Dealer as contemplated by this Agreement shall be performed by it as an independent contractor. The full cost and responsibility for hiring, firing and compensating employees of the Dealer shall be borne by the Dealer. Nothing in this Agreement or otherwise shall be construed as constituting an appointment of the Dealer as an agent, legal representative, joint venturer, partner, employee or servant of GAL for any purpose whatsoever. The Dealer is not authorized to transact business, incur obligations, sell goods, solicit orders, or assign or create any obligation of any kind, express or implied, on behalf of GAL, or to bind it in any way whatsoever, or to make any contract, promise, warranty or representation on GAL's behalf with respect to Products sold by GAL or any other matter, or to accept any service of process upon GAL or receive any notice of any nature whatsoever on GAL's behalf.

19. Limitation of Liability; Disclaimer of Warranties: Under no circumstances will GAL be liable for any loss of profits or revenue by Dealer for any actions, advertising, sales, promotion, organization, business practices, or any other activity by GAL. GAL may offer or publish certain warranties or other agreements to retail customers or end-users of its Products at any time, and from time to time, in its sole discretion. Dealer acknowledges and agrees that it is not a retail customer or end user of GAL Products and, therefore, Dealer is not an intended beneficiary of or party to any such warranties.

GWACS ARMORY LLC



or agreements, except as expressly set forth herein or in a separate written agreement between the parties.

20. Insurance: Dealer must maintain comprehensive commercial general liability insurance, covering both personal injury and property damage, including "contractual" coverage for Dealer's indemnity obligations hereunder, and having limits of not less than \$1,000,000 per occurrence and \$2,000,000 aggregate liability per policy. Dealer shall also maintain employer's liability insurance, with minimum limits of \$1,000,000 liability per occurrence. Each carrier providing any such insurance, or portion thereof, shall be licensed to do business in the jurisdiction where the Dealer is located, and unless otherwise agreed by GAL in writing, shall have a claims paying ability rating by Best's Guide of not less than "A Minus, VII" or better. At GAL's request, at any time and from time to time during the term hereof, Dealer shall provide GAL a current certificate of insurance demonstrating the coverage described above.

21. Indemnification: Under no circumstances shall GAL be liable for any act, omission, contract, debt or other obligation of any kind of the Dealer or any salesperson, employee, agent or other person acting for or on behalf of the Dealer. Dealer shall indemnify and hold GAL harmless from any and all claims, liabilities, losses, damages or expenses (including reasonable attorneys, fees and costs) arising directly or indirectly from, as a result of, or in connection with, the Dealer's operation of the Dealer's business. GAL shall indemnify and hold Dealer harmless from any and all claims, liabilities, losses, damages or expenses (including reasonable attorneys, fees and costs) arising directly or indirectly from, as a result of, or in connection with, GAL's operation of GAL's business. The terms of this indemnity shall survive the termination of this Agreement.

22. Confidential Information: As used in this Section, "Proprietary Information" means information developed by or for GAL which is not otherwise generally known in any industry in which GAL is or may become engaged and includes, but is not limited to, information developed by or for GAL, whether now owned or hereafter obtained, concerning plans, marketing and sales methods, materials, processes, procedures, devices utilized by GAL, prices, quotes, suppliers, manufacturers, customers with whom GAL deals (or organizations or other entities or persons associated with such customers), trade secrets and other confidential information of any type, together with all written, graphic and other materials relating to all or any part of the same. Except as authorized in writing by GAL, the Dealer shall not at any time, either during or after the term of this Agreement, disclose or use, directly or indirectly, any Proprietary Information of which the Dealer gains knowledge during or by reason of this Agreement and the Dealer shall retain all such information in trust in a fiduciary capacity for the sole use and benefit of GAL.

23. Additional Terms and Conditions:

a) **Entire Agreement; Modification.** This Agreement constitutes the entire agreement between the parties relating to the subject

matter hereof and all prior agreements, correspondence and understandings of the parties (whether oral or written) are superseded hereby, it being the express intention of the parties that this Agreement shall serve as the complete and exclusive statement of the terms of their agreement together. No amendment, waiver or other modification to all or any portion of this Agreement or the rights and obligations of the parties hereunder shall be valid unless in writing and signed by the parties. Neither party has relied upon any statements, representations, or other communications that are not contained in this Agreement.

b) **Governing Law; Venue.** This Agreement shall be governed by and construed in accordance with the laws of the State of Oklahoma, without application of any conflicts of law principles. In the event of any litigation involving this Agreement, all such matters will be resolved exclusively in the state or federal courts seated in Tulsa County, Oklahoma, and the Dealer consents to such venue and jurisdiction.

c) **Notices.** All notices required or permitted to be given under this Agreement shall be in writing and shall be considered to be given and received in all respects when (i) personally delivered; (ii) one (1) business day after sent by reputable overnight delivery service; (iii) same day if delivered by email to the dealers@gwacsarmory.com, including proof of delivery by electronic confirmation; or (iv) three (3) business days after being deposited in the United States mail, certified mail, postage prepaid, return receipt requested, addressed to the parties at their respective addresses set forth below, or to such other address as may be designated by like notice duly given.

d) **Severability.** The parties agree that if any provision of this Agreement is under any circumstances considered invalid or inoperative by any court of competent jurisdiction, such provision shall be deemed modified to the extent necessary to render it enforceable and the rights and obligations of the parties hereunder shall be construed and enforced accordingly, or, failing which, such provision shall be stricken and the remainder of this Agreement shall remain in full force and effect.

e) **Assignment.** This Agreement may not be transferred or assigned in whole or in part by operation of law or otherwise by the Dealer without the prior written consent of GAL. Upon thirty (30) days prior written notice to the Dealer, GAL may assign its rights, duties and obligations under this Agreement. Without written notice, GAL may assign its rights, duties and obligations under this Agreement to any parent, subsidiary or other affiliated corporation of GAL.

f) **Waiver.** Failure of either party at any time to require performance by the other party of any provision hereof shall not be deemed to be a continuing waiver of that provision, or a waiver of its rights under any other provision of this Agreement, regardless of whether such provision is of the same or a similar nature.

U.S. Department of Justice
Bureau of Alcohol, Tobacco, Firearms and Explosives

Federal Firearms License
(18 U.S.C. Chapter 44)

In accordance with the provisions of Title 1, Gun Control Act of 1968, and the regulations issued thereunder (27 CFR Part 478), you are licensed to engage in the business specified in this license, within the limitations of Chapter 44, Title 18, United States Code, and the regulations issued thereunder, until the expiration date shown. See "WARNINGS" and "NOTICES" on reverse.

Direct ATF ATF - Chief, FFLC
Correspondence To 244 Needy Road
 Martinsburg, WV 25405-9431

Chief, Federal Firearms Licensing Center (FFLC)

5-73-143-07-4F-03657

June 1, 2014

Name
GWACS ARMORY LLC

Premises Address (Changes? Notify the FFLC at least 30 days before the move.)
907 S DETROIT AVE
TULSA, OK 74120

Type of License

07-MANUFACTURER OF FIREARMS OTHER THAN DESTRUCTIVE DEVICES

Purchasing/Certification Statement

The licensee named above shall use a copy of this license to assist a transferor or firearms to verify the identity and the licensee's status of the licensee as provided by 27 CFR Part 478. The signature on each copy must be an original signature. A faxed, scanned or e-mailed copy of the license with a signature intended to be an original signature is acceptable. The signature must be that of the Federal Firearms Licensee (FFL) or a responsible person of the FFL. I certify that this is a true copy of a license issued to the licensee named above to engage in the business specified above under "Type of License."

[Signature]
Licensee/Responsible Person Signature

Judson Gudgel

Printed Name

Previous Edition is Obsolete

Mailing Address (Changes? Notify the FFLC of any changes.)

GWACS ARMORY LLC
907 S DETROIT AVE
TULSA, OK 74120

ATF Form 8 (5310.11)
Revised September 2008

Federal Firearms License (FFL) Customer Service Information

Federal Firearms Licensing Center (FFLC)
244 Needy Road
Martinsburg, WV 25405-9431

Toll-free Telephone Number: (866) 662-2750
Toll-free Fax Number: (866) 257-2749
E-mail: NLC@atf.gov

ATF Homepage: www.atf.gov
FFL eZ Check: www.atfonline.gov/filezcheck

Change of Address (27 CFR 478.52). Licensees may during the term of their current license remove their business or activity to a new location at which they intend regularly to carry on such business or activity by filing an Application for an Amended Federal Firearms License, ATF Form 5300.38, in duplicate, not less than 30 days prior to such removal with the Chief, Federal Firearms Licensing Center. The application must be executed under the penalties of perjury and penalties imposed by 18 U.S.C 924. The application shall be accompanied by the licensee's original license. The license will be valid for the remainder of the term of the original license. (The Chief, FFLC, shall, if the applicant is not qualified, refer the application for amended license to the Director of Industry Operations for denial in accordance with § 478.71.)

Right of Succession (27 CFR 478.56). (a) Certain persons other than the licensee may secure the right to carry on the same firearms or ammunition business at the same address shown on, and for the remainder of the term of, a current license. Such persons are: (1) The surviving spouse or child, or executor, administrator, or other legal representative of a deceased licensee; and (2) A receiver or trustee in bankruptcy, or an assignee for benefit of creditors. (b) In order to secure the right provided by this section, the person or persons continuing the business shall furnish the license for that business for endorsement of such succession to the Chief, FFLC, within 30 days from the date on which the successor begins to carry on the business.

(Continued on reverse side)

Cut Here


POWER SERIES

GWACS ARMORY, LLC

Shel Jones
US Army LTC Retired
907 South Detroit Ave.
Sixth Floor
Tulsa, OK 74120
202-595-4683 - Mobile
918-794-5670 - Office
sjones@gwacsarmory.com

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The electronic FFL Newsletter will enable ATF to communicate information to licensees on a periodic basis.

GWACS ARMORY LLC



2013 Dealer Pricing Sheet

	MSRP	MAP	Dealer
CAV15 MKII Lower Receiver	\$195	\$185.25	\$136.50
CAV15 MKII Lower Receiver Populated MILSPEC Trigger	\$285	\$261.25	\$216
GWACS CAV15 A1/A2 Solid Butt Plate	\$29.95	\$28.45	\$21

Dealer pricing assumes an initial purchase of 5 or more.

Lower receiver comes with take down pins, but plate, and 5/64th roll pin.

Lower receiver populated includes lower receiver as stated above with carbine buffer and spring, Buffer Detent and MILSPEC trigger group installed and tested.

MAP WILL BE ENFORCED

Current Colors, Call for availability.

Black (Magpul Match)

Coyote Tan

Flat Dark Earth (Magpul Match)

OD Green (Magpul Match)

Zombie Green

CAV-15 MKII Receiver

Assembly Instructions:

Notes to Gunsmiths and Armorers:

- * **Takedown Pins:** Use the supplied speed pins to secure your upper receiver to your CAV-15 lower receiver. *If you lose or misplace the supplied pins, replacement pins can be ordered from GWACS Armory at a cost of \$5.00 a piece.
- * The CAV-15 MKII lower receiver uses a ***carbine buffer and spring***.
- * The CAV-15 MKII lower receiver uses standard mil-spec fire control pins. Though the area of the receiver that accepts the hammer pin is wider than aluminum AR15 receivers, it uses a standard fire control pins. Simply center the pin in the hole, and ensure it catches on the J-pin in the hammer.
 - * **Check all pinholes before you Assemble gun!**

Parts vary slightly between manufacturers and some parts may fit tighter than others, especially the safety selector detent.

- * Safety selector detent pin/spring load from the top. The spring may need to be trimmed for proper fit. The top of the detent should sit at 0.20" (+/- 0.020) from the base of the selector hole.
- * Bolt hold open spring will need to be trimmed 1 to 1½ coils for the last round hold-open to function with older/weak magazines.
- * The 5/64th roll pin attached to this sheet is to capture your buffer detent pin and spring.

CAV-15 Technical Notes:

*If the Safety Selector Detent will not fit into the hole for the selector spring and detent, this is usually because the base of the detent itself is too wide. The base can be cut or ground off to fit.

*Selector spring and detent load from the top. Selector then slides over.
Note: Selector does not need to ever be removed. Fire control parts can be installed and removed with it in place. Before inserting selector check spring tension and trim the spring if needed. The safety can be removed by placing half way between safe and fire and pushing out.

* The fit of the take down pins on the CAV-15 is intentionally tight. This is intended to keep the upper secured to the lower. The pins may require the use of a rubber hammer and punch to remove. The fit will wear in over time the more the rifle is disassembled for maintenance.

If your magazines do not drop free from your lower, and you have verified that they are good magazines follow these instructions:

1. Separate the upper from the lower.
2. Looking down from the top into the lower, look to see where the magazine is dragging with a magazine inserted.
3. Use a safe edge file to remove material from the mag well in the tight areas until the magazine drops free.
4. Check the fit frequently so you do not remove too much material.

*If the buffer detent roll pin does not line up properly when hammered in to the lower, try inserting it from the opposite side to remedy the problem.

*If the buffer detent does not sit high enough to capture the buffer, it can be fixed by relieving material from the shoulder of the detent to allow it to sit higher.

CAV-15 .45 ACP Technical Notes

***You will need the following parts to build a .45 ACP CAV-15 Carbine:**

1. Complete CAV-15 MKII Lower
2. Olympic Arms .45 ACP Upper
3. Hahn Precision M3 Grease Gun Magazine Block
4. Heavy 8oz+ buffer (Hahn Precision or Slash)
5. M3 Grease Gun Magazines

***Failure to use the heavy 8oz+ buffer will result in damage to the lower.**

***M3 Grease Gun Magazine Fit:**

The CAV-15 MKII has the center of the magazine well wider to be capable of accepting grease gun mags. This feature was designed based on some USGI surplus mags it had at the time (2003). Recently new batches of magazines have surfaced and there are manufacturers making new M3 Grease Gun Magazines. These magazines appear to be dimensionally different than the older USGIs we have. Users have started to encounter problems with these magazines in the CAV-15 lower.

If your M3 Grease Gun magazines are fitting too tightly into your lower, do not force them in. Doing so risks damaging the lower. Fortunately, the CAV-15 receivers' construction lends itself to end user fitting and modification.

The area that is too tight is usually the very front of the mag well where it is narrow for .223/5.56mm magazines. Follow the steps below to give M3 Grease Gun Magazines a better fit.

1. Separate the upper from the lower.
2. Looking down from the top into the lower, look to see where the magazine is dragging with a magazine inserted (do not insert the mag all the way if it is tight.)
3. Use a safe edge file to remove material from the mag well until the magazine moves in and out freely.
4. Check the fit frequently so you do not remove too much material.

CAV-15 MKII Armorer Notes

Differences between CAV-15 MKII Receiver and standard aluminum receiver.

- Selector spring and detent load from the top. Selector then slides over.
- Note:** Selector does not need to ever be removed. Fire control parts can be installed and removed with it in place. Before inserting selector, check spring tension and trim spring if needed. Safety can be removed by placing half way between safe and fire and pushing out.
- Safety Detent may need sizing
- Hammer pin will be recessed on both sides of hole. Insert until “J-Pin” engages center notch.
- Bolt catch may need spring trimmed to ensure proper tension.
- Take down pins are intentionally tight. Pins insert left to right into the receiver and are not captured in the receiver. Long pin in front, short pin in rear.
- Calibers larger than .223 will require 3H or heavier buffers. Unlocked blowback pistol caliber uppers must use appropriate weights (9mm 5.5oz, .45 8 oz. Or heavier to avoid damaging the lower)
- Buffer Detent is held in by 5/64thx1" Roll Pin (Buffer Detent Assembly is not needed for function of the rifle)

Parts Needed to Complete Lower:

- 1 Carbine buffer and spring
- 2 Hammer/Trigger pins
- 1 Hammer with spring
- 1 Trigger with spring
- 1 Disconnector with spring
- 1 Bolt catch with roll pin
- 1 Bolt catch detent with spring
- 1 Safety selector
- 1 Selector detent with spring
- 1 Buffer detent with spring
- 1 5/64thx1" Roll Pin
- 1 Mag Catch with button and spring
- 1 Long 1/4" Speed Pin
- 1 Short 1/4" Speed Pin

Tools for assembly and Armorer level repair:

- Roll Pin Driver 5/64"
- Roll Pin Holder 5/64"
- Hammer
- Razor Knife
- Small file (safe edge)
- Diagonal pliers
- #24 Drill bit (bolt catch detent)
- #27 Drill bit (safety detent)
- 1/4" Reamer (take down pins and buffer detent)
- 5/64" Drill bit (buffer detent cross pin)
- 1" 1/2 Round file
- #40 Aircraft drill (bolt catch cross pin)
- Receiver Construction
 - Nylon 6 30% Glass filled
 - Linear vibration welded

Disclaimer:

Possession and/or ownership of firearms is subject to various federal, state, and local restrictions, laws and regulations. Buying, carrying, or using a firearm without compliance with local, state, and federal law is a crime. It is your legal responsibility to learn and obey the laws that apply in your area. The buyer has complete responsibility to ensure he/she is in full compliance with all applicable local, state and federal

law regarding possession of firearms. GWACS Armory LLC reserves the right to refuse the sale of any firearm to anyone who may be in violation of the laws of the State of Oklahoma and the United States of America pertaining to the purchase of a firearm. This includes, but is not limited to, "straw purchases", which is a purchase or the attempt to purchase by an individual for another person knowing they are not permitted to possess a firearm. Further, the buyer assumes any and all responsibility to insure any firearm purchased is handled safely. OUR PRODUCTS ARE INTENDED FOR ADULT USE ONLY. GWACS ARMORY LLC SHALL IN NO WAY BE LIABLE FOR ANY SPECIAL, INDIRECT, PUNITIVE OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY USE OR MISUSE OF ANY ITEM OR PRODUCT PURCHASED OR OBTAINED FROM THE GWACS ARMORY LLC.

GWACS ARMORY LLC



Manufacturer's Warranty

GWACS Armory LLC CAV15 MKII lower receivers come with a limited lifetime warranty against any manufacturing defects, subject to the terms listed below:

1. Any GWACS Armory CAV15 MKII found to have a defect in manufacturing will be replaced at no cost to the buyer within one year of the date of purchase. Buyer must provide proof of purchase at the time any claim under this provision of the warranty is made. After one year, GWACS Armory will only replace a CAV15 MKII lower receiver based on the damage warranty below.
2. After one year, GWACS Armory will replace any damaged GWACS Armory CAV15 MKII lower receiver (stripped receivers only – receiver with no buffer, buffer spring, or trigger assembly group) for \$30.00 (thirty dollars) plus shipping. When submitting a claim under the provision of this warranty, claimant must send to GWACS Armory the *stripped* damaged lower receiver along with the payment of \$30.00 (thirty dollars). Once verified, GWACS Armory will return a new *stripped* GWACS Armory CAV15 MKII lower receiver to the claimant, COD.
3. GWACS Armory will honor the damage warranty listed in paragraph 2 above on any and all previously produced CAV15 MKII lower receivers, whether produced by GWACS Armory or any previous manufacturer of CAV15 MKII lower receivers. Claimant must abide by the requirements in paragraph 2 in order to submit a claim pursuant to this paragraph. Further, a claim submitted under this provision will be considered the transfer of a firearm, requiring the claimant to successfully pass any background check required by local, state, or federal government, as well as complying with any local, state or federal laws governing the transfer of firearms.
4. This warranty does not cover any unauthorized or illegal modifications made to any CAV15 MKII lower receiver. It further does not cover any add-ons, attachments, upgrades, or any other part or accessory that is added by the buyer/owner of a CAV15 MKII lower receiver.
5. When submitting a claim under this warranty, claimant must send the lower receiver along with any required documentation and any necessary payment to: GWACS Armory LLC, ATTN: Warranty, 907 S. Detroit Ave., 6th Floor, Tulsa, OK 74120.